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[ORIGINAL COMMUNICATION.]

PHARMACOGNOSTICAL NOTES.

BY JOSEPH SCHRENK.

VALERIANA.—In the pith of the rhizoma, there are quite frequently found several horizontal cross-partitions, which consist chiefly of very hard sclerenchyma cells. It is, therefore, quite difficult to prepare good thin sections for examination. The root-stock should be soaked for a day or two in a weak solution of ammonia, and then in a mixture of glycerin and alcohol. Even then very cautious manipulation is necessary, if we do not want to spoil our knives.* As the rootlets form a considerable portion of the bulk of this drug, it is perhaps worth while to know that they do not contain simply "a slender vascular cord,"† but a ring of fibro-vascular bundles surrounding a narrow pith.‡

ARNICA MONTANA, L., is not found in "Northwestern America,"§ for the North American plant known by that name is *Arnica foliosa*, Nutt.‖

SERPENTARIA.—The morphological description of *Aristolochia Serpentaria*, L., contained in our pharmacopœia, needs some modification. The rhizoma is evidently a sympodium which consists of a number of joints, each being the result of one season's growth. At the end of every joint grows the stem which bears leaves and flowers. It falls off after having performed its functions, and leaves a small scar, so that there are no "stem-remnants." It is, therefore, not correct to say: "The rhizome . . . on the upper side with approximate, short stem-remnants." The following description suggests itself: "The rhizome . . . consisting of several short, curved joints, each with a scar at its upper, projecting end."

ACONITUM NAPELLUS, L., does not grow in "western North America."¶ "Large quantities are imported and used in the United States, but none of our native species have been recognized by either pharmacopœia or dispensatory."**

The structure of the root of aconite is not correctly described in our pharmacopœia and in Maisch's "Materia Medica." The latter says (l. c.): "Nucleus sheath about seven-rayed." The *nucleus sheath* or endodermis of the aconite root is found quite close to the surface; it is nearly circular and consists of a single layer of tangentially elongated cells. It is the *cambium zone*, consisting of about eight rows of cells, which presents on the cross-section the appearance of an irregular star with from five to nine rays. The cambium line, of course, incloses the entire woody portion of the fibro-vascular bundles, not the pith only, as the Pharmacopœia might lead to believe by speaking of the "seven-rayed pith."

RHAMNUS PURSHIANA.—The bark contains numerous sclerenchyma cells of most irregular, angular shape, wedged together so as to form large, compact groups, which increase in size and number toward the surface. They cause the short fracture of the outer bark, while the inner is fibrous, the bast cells projecting in narrow, tangential bands. As Frangula has the bast bundles arranged in a similar way, but no sclerenchyma cells, the presence of the latter in "Cascara sagrada" is of diagnostic value.

COCA.—On the lower surface of the leaf we notice two curved lines, on both sides of the midrib, running from the pointed, lower end of the leaf to its apex. These lines form one of the most important characteristics of the drug; they are mentioned in the descriptions of various authors as "folds of the blade."

In *Pharmaceutische Rundschau* (April, 1885), Dr. T. F. Hanausek describes and illustrates the anatomical structure of the coca leaf, and quotes from his book* the following passage referring to this "tissue-fold." "Numerous, especially older, leaves have on each side of the midrib a fold which is prominent on the lower side and runs in a curve from base to apex. It has the appearance of a lateral rib and was originally considered as such. At some points lateral veins seem to originate from the fold."

A close examination will soon lead to the conclusion that the lines in question cannot be considered as "tissue-folds" or "folds of the blade." The surface view of the epidermis shows that the line is formed by a narrow band of tissue consisting of several rows of elongated, oblong cells which contrast very much with the polygonal cells of the epidermis bordering on the line. (The latter cells are extended into peculiar papillary projections,† Fig. 1, *p*. A cross-section through the line (Fig. 1) plainly demonstrates that the entire ridge is simply a sub-epidermal strand of *collenchyma cells*. There is no "fold" in the epidermis, nor in the spongy parenchyma or palisade layer, nor is there any connection between the line and the fibro-vascular system (the veins) of the leaf. There is little doubt that this band of collenchyma serves as an elastic stiffening of the blade.

TABACUM.—While examining a small young leaf of tobacco, I found a very peculiar form of hairs which, to my

FIG. 1.

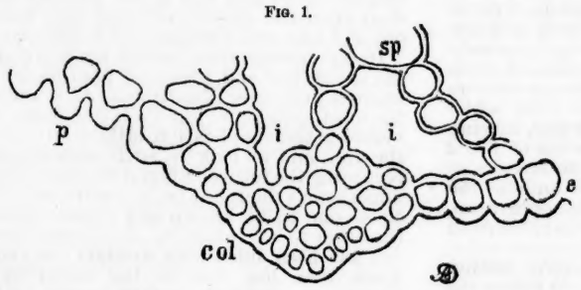

FIG. 2.

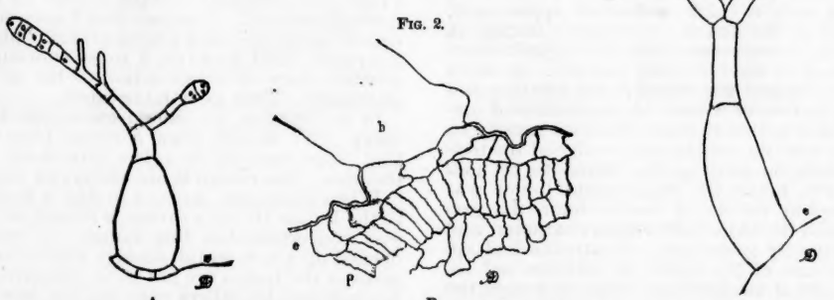

FIG. 1.—*Coca leaf*, cross-section through one of the two curved ridges on lower side of leaf; *e*, epidermis; *p*, papillary projections; *col*, collenchyma tissue; *sp*, spongy parenchyma; *i*, intercellular spaces; × 420.

FIG. 2.—Branched glandular hairs on epidermis, *e*, of *tobacco leaf*; A, on young leaf; C, on old leaf; × 130, reduced one-half; B, cross-section of leaf, showing epidermis cells, *e*, and palisade tissue, *p*, at base of branched glandular hairs, *h*, × 420, reduced one-half.

* This note was caused by the following passage in the excellent work of Dr. W. Marmé, "Pharmacognosie des Pflanzen- und Thierreichs" (1886), p. 98: "After maceration in dilute alcohol, the drug can be cut without any difficulty."
† Maisch, "Organic Mat. Med.," p. 135.
‡ Flückiger, "Pharmacognosie," etc., p. 430.
§ Maisch, l. c., p. 135; also Flückiger, l. c., p. 434.
‖ Gray, "Synopt. Fl. of N. A." (1884), p. 382.
¶ Maisch, l. c., p. 154.
** Lloyd's "Drugs and Medicines of N. A." vol. i., p. 216.

* "Die Nahrungs- und Genussmittel aus dem Pflanzenreiche," 1884.
† Hanausek, l. c.

knowledge, had not yet been described.* I was inclined, therefore, to think that these hairs occurred on young leaves only, and for that reason had not yet been detected. But the very first few scraps of tobacco stems and leaves from a cigar-factory demonstrated to me that these curious hairs are found on full-grown leaves also, and that, consequently, they might be considered of some diagnostic interest. It requires, however, considerable patience to hunt them up, and in some cases I did not find any.

They are much longer than ordinary hairs, on old leaves sometimes more than twice as long (.12 mm. and longer). The large, much inflated basal cell of such a hair rests on a number of cells raised slightly above the level of the epidermis, Fig. 2, A and B. The other cells are much narrower; some of them have lateral extensions, as shown in Fig. 2, A and C. In each hair one or two of these extensions develop into several-celled branches, which have at their end, either a glandular head, Fig. 2, A, or a simple cell tapering to a point, Fig. 2, C. The end of the axis is always occupied by a several-celled gland. The glands have the same contents as those on unbranched hairs, viz., some yellowish oil and calcium oxalate crystals.

March 4th, 1887.

On Maclagan's Test of the Purity of Cocaine.

REFERRING to the new test for the purity of cocaine by Mr. Henry Maclagan, of New York, published on page 22 of our January number, the editor of the *Chemist and Druggist* makes the following statement:

"We have made some experiment with the test, using (1) an English-made crystalline hydrochlorate, (2) a foreign hydrochlorate in granular crystals, and (3) a sample of crude cocaine imported from South America, which was known to contain amorphous alkaloid. Solutions of each were made of a strength equal to 1 grain in 1 oz. of distilled water. On the addition of a single drop of liquor ammoniæ to the solution of No. 1 and stirring vigorously with a glass rod, there was a copious separation of crystals in a few seconds, and the edges of the test-glass where the rod had rubbed were thickly marked with white streaks. The crystals subsided in a few minutes, leaving a clear supernatant liquor. With the solution of No. 2 the separation was not so rapid, nor were the streaks so prominent, but in the course of a quarter of an hour the precipitate assumed a distinctly crystalline appearance, and with the liquor was in no wise distinguishable from No. 1.

The solution of No. 3, on the other hand, gave neither streaks nor precipitate in the course of twelve hours, the solution assuming only a faint opalescent appearance, which disappeared at the end of twenty-four hours. A further proof of the correctness of Mr. Maclagan's observations was obtained in the following manner: A tenth of a grain of crude cocaine was added to the solution of 1 grain of No. 1 salt in 1 oz. of water. A single drop of ammonia solution added to this mixture produced turbity on stirring, but there were no streaks on the edge of the test-glass; the precipitate on settling was found to be non-crystalline, after two hours the supernatant liquor was still opalescent, and at the end of twelve hours the precipitate still retained its white pulverulent character, and the liquor was distinctly opalescent. No streaks had appeared. As in the case of No. 3 salt, the solution had become clear at the end of twenty-four hours, although the odor of ammonia was distinctly perceptible. It is evident, therefore, that in this test pharmacists have a ready means of assuring themselves of the purity of cocaine salts. The test is best performed in a 1 oz. conical measure-glass, which allows quick observations of the formation of streaks and of the nature of the precipitate. Judging from the experiments which we have made, the results corroborate Dr. Paul's observation that only the crystalline hydrochlorate should be used for medicinal purposes, and the distinctive and rapid response to the test of the English-made hydrochlorate in large crystals was very striking."

Inefficiency of Percolation.—J. W. Colcord expresses the belief that a large proportion of the fluid extracts and tinctures of the Pharmacopœia do not represent the complete strength of the drugs. The direction to macerate when the liquid begins to drop is wrong in theory and misleading in practice. Experiments upon the solubility of sugar are quoted as evidence of the correctness of this statement, and an arrangement of diaphragms is described, by means of which the author seeks to prevent the passage of the menstruum along the walls of the percolator without properly affecting the main body of the drug.

Chloroform-Water, as a hæmostatic, is finding more general employment, with satisfactory results.

* Dr. A. F. W. Schimper, in his book: "Anleitung zur mikrosk. Untersuchung der Nahrungs und Genussmittel," 1886, describes and figures three kinds of hairs: 1st, long hairs, each bearing a gland of a single row of a few cells; 2d, very short hairs with relatively large, several-celled glands supported by a one-celled stem; 3d, conical, pointed hairs of one row of cells.

[ORIGINAL COMMUNICATION.]

'THEORETICAL AND PRACTICAL PHARMACY."*

BY PROF. J. U. LLOYD, OF CINCINNATI, OHIO.

IN presuming to offer this communication, I realize that perhaps I am on uncertain ground. Not that there exists in my mind a question as to the future of pharmacy, but because I doubt if pharmacists generally are yet ready to admit as much as I will. It might, therefore, be better for me to remain silent, and yet it may be that I am now as well prepared to stand the criticisms that may follow as others. Perhaps I may be in a better condition than some of my friends who may possibly view these matters as I do; and some one must make a start. If I err in my conclusions, it is not without due consideration of the subject, my views having certainly been framed during an active life amid, and an active experience in, some sections of the practice and study of pharmacy. That my present stand is different from the one I occupied some years ago is evident, but Pope has written: "A man should never be ashamed to own he has been in the wrong, which is but saying, in other words, that he is wiser to-day than he was yesterday," and this ground is still open to us.

In this connection, I will candidly state that I believe the present tendency is towards the casting of a stigma on what is called theoretical pharmacy; which will perhaps unconsciously create a distinction between reason and operation; lead the student to infer that attention is not conducive to the practice of pharmacy; to draw a dividing-line where there should be no distinction; to create an artificial prejudice against one side of a beautiful study without which the other side is drudgery; to cherish a hallucination; for I firmly believe that the brightness we may find in our practice is largely dependent upon the theories of those who have worked them out and who will continue still to theorize.

In my opinion, there should not be a distinction between the theoretical and practical pharmacist. In allied professions and other departments of science, the man with the most systematic knowledge of facts, and who is best versed in their application, is the man to give us the clearest theories, and we look to such authorities for statements regarding the future. Should we, then, further a tendency, unconscious though it be, to create two classes of pharmacists—one to be known as a vague, impractical theorist; the other to be a plodding, mechanical drudge? That my cup has been filled with drudgery is evident to all who know me; but that in the midst of the monotony I have unconsciously cheered myself by the other side is now self-evident. I confess that I once studied to perfect myself in the so-called practical part of pharmacy and did not realize that, to do so, I must continually devote the greater share of my attention to the so-called theoretic pharmacy. They go hand-in-hand.

In my opinion, we should encourage theoretical pharmacy. We should draw a lesson from the advantages that have accrued in other directions by attention to theories. The return is not always as we think it will be.

When Columbus thought to find a more direct course to the Indies, it was a dream, a failure, as far as his theory was concerned; but this failure to support his views opened up a new world, besides which the hoped for treasures of the Indies are not to be compared. He failed in his purpose; his labors were not lost, however.

The various theories that have been propounded from time to time concerning the origin of matter or nature of force are still theories, and students are perhaps as far from an accepted conclusion as during or even before the day of Avagadez, but the literary riches that have resulted from these unsatisfactory dreamings cannot be overestimated. The returns to pure science and the comforts of every-day life that have accrued through the labors of men who were thereby led to more practical investigations by means of such vaporizing beginnings, from the love of the study of an ethereal literature, can never be known.

It is not alone the so-called practical return (stomach-stuffing and garment-wearing) that benefits the human race. A theory may not return directly a dollar to the author or any other person, and still be of incalculable value to humanity. Do I overstep the line of propriety when I class a beautifully expressed theory, perhaps unsupported by many facts, with the literary productions of the poets and others who also draw upon their imagination and paint their thoughts on paper? Shall we greedily drink in the mind expressions of a visionary man—a genius who writes a beautiful tale of fiction, and then crush the advances of another, whose prosaic branch of Nature's laboratory has led him to frame a theory (story perhaps) that is not all true, and that may not be altogether supported by a subsequent arrangement of facts?

The reading of such a production may give as much real enjoyment to many persons as a standard poem, perhaps more. The beauty of science is perhaps in great part the anticipation; do we not find that, in every other direction

* Read before the New York College of Pharmacy, March 17th, 1887.

connected with a study of Nature, most enticing theory-paintings are presented, as well as recorded facts?

In this connection, I am led to believe that a money return may be the lowest of motives for judging of the value of a literary production; indeed, indirectly, do we not admit that fact when we give money for mind enjoyment of any kind?

Is it not true that we often spend money that we can scarcely afford, to experience a short relief from care and anxiety? And to the writer a peculiar pleasure is derived from the theories of specialists who attempt to arrange the perhaps unorganizable phenomena of Nature.

We may never learn the mystery of the origin of comets; certainly, the study of these erratic visitors returns but little, if anything, from a monetary view, and yet we find some men are willing to devote their lives, and others an abundance of gold, to their observation, and such theorists are not ridiculed for stepping into the domain of fancy. Who is not charmed by the story of the possible wanderings of these mysterious members of a universe; who is not attracted by theories regarding their peculiar manœuvres? The theories of these men commence in space and end in space, as they attempt to describe a floating visitor, supposed by some to be more attenuated than expanded hydrogen. They are literary stories, perhaps, like other mind productions, but to many they are of greater beauty than a standard poem, and men are not treated to sarcasm for evolving them. Can a theory in pharmacy be based upon a more attenuated foundation?

The history of alchemy is a beautiful study, and the results of the alchemist's labors are now commercial treasures, although his theories were not demonstrated. The possibility of the transmutations of the metals, however, is perhaps not altogether unreachable; who would not prefer to say that an element had never been decomposed, rather than that it cannot be decomposed? Who of our modern chemists will boldly disclaim the possibility of that feature of the aged alchemist's dream? In this connection, I can almost believe that the cycle of time may bring us once more to the ground the old alchemist occupied, and that modern science may lighten up the path of the future chemist with the golden dream of other days.

Take the folk lore and legends of those who lived in former times and left those disconnected fragments of a curious literature, what practical benefits to mankind accrue from their consideration? What return to humanity do we find in the theories expounded by scholars regarding their origin and meanings? Perhaps none. Yet who of us is not delighted with these weird tidbits that connect us with ancient times, and who is so wrapped in facts (moneyed facts) as to grudge to these legends an occasional passing hour? From the alchemist's dream to Hans Andersen's beautiful fairy tales, the expressions alike interest and instruct us.

It may seem that subjects such as I have named are not connected with pharmacy, and I do not presume to imply that our study can produce anything weird, or that will be a beautiful part of general literature or become of public interest. But, perhaps it would be an upward step if students of pharmacy (like students of all other sciences have done) should open up their literature to a more free statement of uncertainties and theories. Perhaps we would receive new life and vigor if the *possibilities* of pharmacy were occasionally presented in as attractive a form as are the possibilities of other and even connected sciences or professional topics.

In the monotony of my own life in a laboratory, I have craved in connection with my studies for such theories as we find in connected branches; this I admit. Have not pharmacists enough facts now under control to pass beyond the known and perhaps not really encroach upon the unknowable? Will any pharmacist assert that all has been learned and that his art is perfect? If not, by what reasons are we denied the right to theorize; an inheritance that belongs to students in collateral sciences? Is it true that in a study involving so much attention (that, as I believe, is still in its rudiments) all is prose and must ever remain a bleak field, a rule of thumb monotony, an empirical wandering and stumbling, excepting as we call upon the theories of connected sciences?

Are we not united, on the one hand, with the chemist and his theories regarding matter and force, and upon the other with the physician and his theories regarding disease expression and vitalized morbid matter? Do we not interest ourselves in each direction, and are we not continually meeting with problems connected with our life-work as interesting to us as any of these are to others? Is there no field for a pharmacist other than mechanical detail and shop drudgery?

We are in the finite as they are; we bow before the Infinity as they do. We meet perplexities day by day that would serve as food for interesting papers, if recorded. Queries arise, they are lost because, perhaps, as a rule, we have learned to only speak of what we view as facts, and dare not presume to anticipate aloud.

I am perhaps not often given to such expressions as these; perhaps I have not time, perhaps a fear of ridicule, perhaps force of habit prevent it. Be that as it may, I feel that a vacancy exists in the study of pharmacy, I believe that others realize it, and I believe it unnecessary. I would like to read the thoughts of other men concerning their ideas of that great unknown to me in pharmaceutical manipulations. It would be a pleasure to learn the theories of some of my friends concerning problems in pharmacy that have from time to time presented themselves, but are not demonstrated. In a work where recreations are almost unknown, there is a desire to learn what others *think*.

Do not tell me that the end of pharmacy is the rolling of pills, mixing of powders, etc., for that is but the beginning; do not tell me there is nothing to learn beyond mechanical manipulations, and that there is no leaven for those who mix and triturate. Do not tell me that the study of pharmacy consists solely in learning what men have already written, and that we must be guided altogether by opinions of those who precede us. We honor and respect the pioneer, but we must not forget that as one man rests from his labor, others will carry the work along, and we must not forget that the passing years open up new avenues. When a man has given his life-long attention to a subject, and is nearly through with his labors, whether it be after the full allotted time of Scripture or because of a necessary crushing of work into a moderate number of years, should it be a matter of ridicule in pharmacy if he pen his theories of the possibilities as described from his study of facts? Is it improbable that individuals are working on lines of investigations that would benefit and interest us all if their ideas and views were expressed, but which will be altogether lost because these particular persons will die before attaining their goal? Would it not be better if the lines of thought of these workers could be recorded; would not our coming students have more interesting problems? Would not the beginner have a greater incentive to push his studies, if interested in a series of problems on the future of pharmacy? Would it be out of place for our writers to occasionally enlighten the pages of a pharmaceutical journal with an argument regarding the possibilities in certain sections of pharmaceutical investigation? Have not all workers in pharmacy problems to solve? Do they not die in the midst of anticipations? Are not these chains of thought then lost beyond a few disconnected facts that have been recorded? Do pharmacists not work by rule, have they no hopes, no anticipations?

Are we doing our duty by the students of our College of Pharmacy when we fail to lead them to become interested in the future of pharmacy for, in part, its literary return? Are we not neglecting our classes unintentionally, when we permit them to view our profession as a "trade" in which money only can be made? If it is true that the profession of pharmacy is now underrated, am I far from right when I assign as one reason the fact that, by some influence, we are known simply as tradesmen? The botanist with his theories of plant relationship, the physician with his theories of disease and drug action, the geologist with his theories regarding the world's history, the chemist with his theories regarding matter and force, the astronomer with his theories regarding the universe, are but examples of the beauties of thought we have in every study and in every section of natural history, excepting perhaps pharmacy. Am I not right in saying that it is the prevalent idea with many that in pharmacy the highest point of excellence lies in learning how to sell substances that the populace know but little about, and, as they believe, at extraordinary prices? I repeat it, this is not in my opinion the object of earnest pharmacy.

I do not pretend now to offer a remedy. I simply say that if we occupy a position beside other professional men who do less studying than we do, it is unnecessary, in my opinion, and I have heard with interest the opinions advanced by respected members of our profession who lament the seeming fact that pharmacy is degenerating into a rule-of-thumb trade. I do not propose to attempt to controvert the fact that there is a hitch somewhere. I only say that to me there appears to be a vacancy in the direction of systematic theories concerning a higher pharmacy.

Pulsatilla in Inflamed Testicle.

DR. GERARD SMITH writes to the *British Med. Jour.*: "Having witnessed the striking curative action of pulsatilla in acute orchitis and epididymitis, I should like to persuade others to follow Dr. Brunton's advice, and give this drug in inflammatory states of the testicle, epididymis, and spermatic cord. To have it in our power to subdue promptly the intense suffering of such cases, is a great blessing; and the relief is so rapid that it is even unnecessary to employ morphine to subdue the pain, whilst the swelling and heat subside more rapidly than under any other drug."

[There is no doubt of the power of pulsatilla to do very great good when used as above mentioned, but far from the recommendation having originated with Dr. Brunton, it has been a recognized plan of treatment among homœopathic physicians for a great many years. It was the subject of a paper by a well-known New York physician (published, we believe, in the *Medical Record*) long ago, and this writer had the fairness to credit homœopathic therapeutics with its origin.—ED. A. D.]

Notes on Some of the Newer Chemicals.*

Chromic Acid is now obtainable absolutely free from sulphuric acid. In commerce there were heretofore two kinds of chromic acid available, one, which was usually designated as "pharmacopœial," but which contained usually up to 7 per cent of sulphuric acid, and an acid for technical purposes which contained sometimes as much as 24 per cent. But it is this latter variety which corresponds most closely with the description of the pharmacopœia, beginning with the words: "scarlet, shining, deliquescent crystals." Hence it is not to be wondered at that this impure acid was often used officinally. Yet for surgical purposes, particularly for application to the fauces and uterus, such an acid is altogether inadmissible. On the contrary, a non-deliquescent substance is required here. Merck has succeeded in producing chromic acid which is absolutely free from sulphuric. It forms small, red, *dry* crystals, easily soluble in water or in alcohol, and only very slowly deliquescent in dry air.

Subiodide of Bismuth, or oxyiodide of bismuth, in form of a brownish-red, amorphous, very fine powder, without odor or taste, of a neutral reaction, and insoluble in water, alcohol, or ether. This has recently been introduced as an excellent antiseptic for external use, particularly in suppurating wounds. It has also been used with good success in gonorrhœa in form of injection (1 part mixed with 100 of water); also in form of ointments (1 : 8) in ulcerations of the rectum, and internally in ulcer of the stomach, typhus fever, etc., in doses of $\frac{1}{2}$ to $\frac{1}{4}$ grain.

Note by Ed. Am. Dr.—Mr. Joseph W. England has recently published a paper in *The Am. Journ. Pharm.* on the use and preparation of this substance. In view of the great variability of the article as sold in the market, he examined different methods by which it may be prepared, and finally came to the conclusion that the following was the most satisfactory :

Bismuth Subnitrate	1,324 grains.
Nitric Acid	3 fl. oz.
Hot Water	12 " "
Potassium Iodide	663 grains.
Hot water	28 fl. oz.

Dissolve the bismuth salt in the acid in a porcelain capsule with the aid of heat, and add 12 fl. oz. of boiling water in small portions at a time, stirring after each addition. Then pour the bismuth solution into the hot water in which the iodide has been dissolved, agitating well after each addition. Continue agitating until decomposition is complete. Filter at once. Wash the precipitate with warm water, dry and powder. Boiling, or nearly boiling water is used to dilute the strong nitric acid solution, because it will thereby be able to stand more dilution without precipitation of oxysalt than with cold water. The black triiodide is first formed, which, on agitating the warm liquid for several minutes, gradually changes into the red oxyiodide. The bismuth solution is poured into the iodide, and not the reverse, in order to prevent the formation of oxynitrate. Hot water is used to precipitate the bismuth salt in, as it hastens the conversion of the triiodide into the red oxysalt. Yet the water must not be too hot, else the nitric acid will decompose some of the oxyiodide and cause the loss of iodine.

In a subsequent paper in the same journal (March, 1887, page 117), Mr. Frank X. Moerck states that the above process does not produce a pure product, but one contaminated with oxynitrate.

He found that when subnitrate of bismuth and iodide of potassium are boiled together with water, they produce an oxyiodide containing still some oxynitrate. Yet in consideration of the fact that *pure* subiodide of bismuth has as yet not been employed in medicine, but only the compound still containing some subnitrate, the author recommends the process outlined below. It is based on the following reaction, derived from an analysis of the product produced :

$3BiONO_3$†	+	KI	=	$BiONO_3(BiOI)_2$	+	$2KNO_3$
bismuth subnitrate		potass. iodide		mixture of 1 mol. of subnitrate and 2 mol. of subnitrate of bismuth.		potass. nitrate

In practice, 10 parts of subnitrate of bismuth are mixed with 4 parts of iodide of potassium and 50 parts of water, and the whole boiled for 30 minutes. The mixture is then filtered, and the precipitate washed until the washings are no longer rendered turbid by nitrate of silver. It is then dried, first by pressure between bibulous paper, and then at 120° C. (246° F.).

Pure subiodide of bismuth was prepared by Mr. Moerck in several ways, the most satisfactory one appearing to be the following: To hydriodic acid add subcarbonate of bismuth in small portions. At first, a yellowish-red solution is produced, carbonic acid being given off. On further addition, the normal triiodide of bismuth is precipitated. This is changed by boiling with subcarbonate into subiodide. The addition of subcarbonate of bismuth to the acid must cease as soon as it begins to lose its reddish color and becomes pale yellow. At this point there is still a little hydriodic acid present.

Cali Nuts ("Nuces Cali").—Under this name, a kind of seed has appeared on the market which has much resemblance to Calabar beans, and might therefore, with more propriety, be called "Cali Beans." Their whole appearance leaves no doubt that they are derived from a papilionacous plant, from the sub-tribe of Phaseoleæ, but the true source has not been ascertained. The seeds come from the western coast of Africa, the same as calabar beans. From the latter they differ, according to Merck, merely in dimensions. He found them to contain an alkaloid which showed the physical and chemical characteristics of physostigmine, and had also the same ultimate composition.

Conessine is an alkaloid prepared by Merck from the bark and seeds of *Holarrhena antidysenterica*. It has been recommended in dysentery and diarrhœa, but nothing definite is, as yet, known regarding its dose.

Congo Paper.—Congo red has the property of being colored blue by acids, more so by inorganic than organic ones (see AM. DRUGG., 1887, 13). Paper tinted with Congo red has the same property as the latter. For instance, it is colored a fine blue tint by free acid in the stomach, while acid salts produce no change. As little as 0.0019% of free acid can be easily detected. Prof. Riegel, of Giessen, has found that the intensity of blue tint produced depends on the *quantity of free acid* present; also that when hydrochloric acid is absent or only present in traces, even though organic acids are present, a distinct blue tint is never produced.

Cytisine Nitrate.—Most species of Cytisus (Broom; Scoparius) contain a crystallizable alkaloid, cytisine, which has been ascertained to be a very energetic poison, $\frac{1}{40}$ grain being capable of causing immediate death to a good-sized dog. It produces a very strong blood-pressure, greater than can be obtained by the largest admissible doses of digitalis. Its therapeutic employment will depend upon further investigations.

Fluid Extracts are at last beginning to receive the recognition of the medical and pharmaceutical professions in Germany. Merck says that, particularly in Germany, this most rational of all known methods of preparing extracts is at last receiving the attention which it ought to have had long ago.

Caustic Potassa, entirely free from silica or alumina, is now manufactured on the large scale, and will no doubt be in lively demand, particularly for analytical purposes.

Posological Notes on New Remedies.

Osmic Acid (used in epilepsy and sciatica).—Best administered in pill form made up with Armenian bole. The dose is $1\frac{1}{2}$ grain, which may be repeated several times a day. *Agaricine* (used for night-sweats).—Best administered in combination with Dover's powder. Dose $\frac{1}{12}$ to $\frac{1}{8}$ grain. *Bismuth Salicylate.*—Dose from 5 to 7 grains, in pill form. In typhoid this dose may be doubled and repeated every hour up to 10 or 12 times. *Canabinone* (sedative and hypnotic).—From $\frac{2}{3}$ to $1\frac{1}{2}$ grain. Best administered mixed with finely-ground roasted coffee. *Colocynthin* (used subcutaneously).—The dose is from $\frac{1}{6}$ to $\frac{1}{4}$ grain. It may also be administered in pill form, by the mouth, the requisite dose being from $\frac{1}{3}$ to 1 grain. *Convallamarin.*—Internally, in pill form, the dose is from $\frac{3}{4}$ to $1\frac{1}{4}$ grain. *Nitroglycerin* (used in angina pectoris, and as a diuretic).—Rossbach prefers ether as a solvent. His formula is as follows:—Dissolve $1\frac{1}{2}$ grain of nitroglycerin in sufficient ether, and add the solution to a mixture consisting of 2 oz. of powdered chocolate and 1 oz. of powdered gum arabic. Mix very thoroughly and divide into 200 pastilles. Each pastille will thus contain $\frac{1}{133}$ grain of nitroglycerin. *Picrotoxin.*—Dose from $\frac{1}{4}$ to $\frac{1}{6}$ grain for epilepsy in aqueous solution. *Sulphate of Thalline* may be given dissolved in wine or water (with some corrigent). The dose is from 4 to 8 grains, or 1 grain every hour.—*Chem. and Drugg.*

Preparation of very Finely Divided Asbestos for Filters.—Asbestos filters are very useful in cases where the liquid to be filtered is of a caustic or strongly acid nature, or where the filter with residue is to be ignited without consuming the filter, or where the residue is subsequently to be dissolved off the filter by acids or other solvents. In many cases, a very finely divided asbestos is desirable. This is accomplished by a process recently patented in Germany by Fr. Breyer, of Vienna.

The asbestos is first coarsely ground and then mixed with some granular crystalline carbonate which must be soluble in acids. The carbonate should possess a hardness between 3 and 4.5 according to the mineralogical scale. The mixture is intimately ground together in a mill. Afterwards the mass is treated with an acid until the carbonate has been dissolved out. The escaping carbonic acid gas causes the asbestos fibres to be loosened and disintegrated from each other so as to render the mass porous. Of course, it must be thoroughly washed with water before being used.

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* Abstract from a circular of E. Merck, January, 1887, with additions from other sources.

† *Note.*—Mr. England renders it probable that the officinal subnitrate is an *anhydrous* salt, $BiONO_3$, instead of one containing 1 mol. of water, as has been heretofore assumed. (*Am. J. Pharm.*, 1887, 13.)

THE SIPHON-PUMP.

THE accompanying cut illustrates a pump which requires neither a piston nor a cylinder. All that is necessary is to place an elastic rubber hose into the groove of the semicircular frame, and to connect the ends with the fixed couplings placed at either end. A suction hose is then attached at one side and a delivery hose at the other. The wheel carries in two of its arms two small rotary wheels, which are placed somewhat eccentrically, so that while one of them on coming in contact with the hose compresses the latter, the other on the opposite side is at this moment gradually releasing its pressure and restoring the full diameter of the hose. When the large wheel has made another half revolution, the same action of the two small wheels is repeated, and so on. The compression of the hose creates a vacuum into which the liquid from the tank, cask, etc., is forced by atmospheric pressure. We have here the same principle as in the well-known rotary pump. In the latter the working parts—eccentrically placed, and sliding paddles—are all contained inside of an iron case or box. In the pump here described (of which the inventor is not mentioned in the publication from which we have copied it), the working parts are outside, easily accessible and readily repaired if they get out of order.—After *Le Monde de la Science.*

Siphon-pump.

IMPROVED BURETTE FOR ETHER.

IN certain cases it is necessary to measure off a given volume of ether (or of other volatile liquids) by means of a burette. When this operation has to be frequently repeated, it is of advantage to use the apparatus devised by Soxhlet, which saves time, labor, and material.

The flask *A* is the reservoir for the ether or other liquid. On pressing upon the rubber bellows, air is forced into *A*, and the stop-cock *B* being at the same time opened, the ether, etc., is forced up into the burette until it reaches *D* and overflows into the flask *G*. The stop-cock is then closed. Next, the requisite quantity of ether, etc., is drawn off by opening the stop-cock *E*. The burette may then immediately be filled again in the same manner, and this may be repeated as often as necessary, without loss of time.

When the flask *G* is full, it is put in place of *A*, and *A* is used to catch the overflow.—*Rep. der. Anal. Chem.*, 1886, 637.

Strophanthus.

MR. H. HELBING, of London, has published the results of a series of experiments he has made with this new drug, from which we take the following (after *Pharm. Zeitung*):

The pods of strophanthus vary greatly in size, weight, and in the number of seeds they contain. Of 5 pods which the author examined, one contained 86 and another 183 seeds, the others being between this figures.

The average percentage weight of the shells of the pods was 35.6%; that of the hairs, 26.9%; that of the seeds 37.4%. Each seed weighed, on an average, 0.08 Gm. (1¼ grains).

The seeds were found to contain:

Fatty oil, soluble in ether	24
Extract, prepared by diluted alcohol (Pharm. Germ.)	26.5
Residue	49.4
	99.9

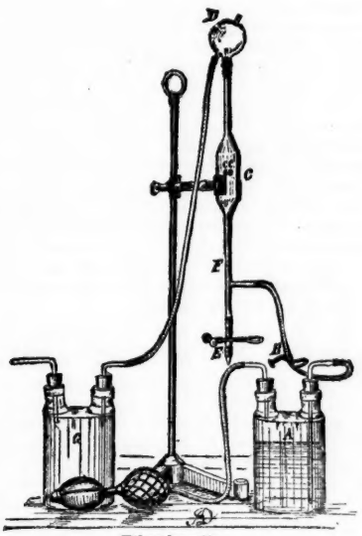
The author prepared *strophanthin* by extracting the seeds with alcohol, treating the extract with water, freeing the watery solution from fat by means of ether, and precipitating the aqueous solution by acetate of lead. The filtrate was then freed from lead by hydrosulphuric acid, the new filtrate decolorized with animal charcoal and carefully evaporated. The product amounted to 8.75% of the seeds. In concentrated aqueous solution it had a strongly acid reaction and a very bitter taste. It is easily soluble in water or alcohol, but insoluble in chloroform, ether or benzin.

For preparing the tincture, the author prefers *diluted alcohol*, because strong alcohol extracts too much of the fat. The strength of the tincture is such that 100 parts of it (by weight) represent 5 parts of the seeds. It has a light greenish-yellow color, a spec. grav. (at 15° C.) of 0.898 (the diluted alcohol, at the same temperature, had the spec. gr. 0.894). The tincture contained 1.32% of dissolved matter. Its taste is quite bitter, and it has a peculiar narcotic odor.

The average dose is from 5 to 10 drops twice daily.

The Pharmaceutical Society proposes to prepare the tincture likewise with diluted alcohol, in the proportion of five of the seeds in 100 parts of tincture; but it recommends the previous removal of fat by ether.

Not long ago a false strophanthus made its appearance in the London market.



Ether burette.

Tincture of Strophanthus.

PROFESSOR T. R. FRASER, of Edinburgh, who introduced strophanthus, publishes a paper (*Brit. Med. Journ.*) in which, as we have previously stated, he gives preference to a tincture, each 20 parts of which represent one of the seed. He explains that the principal reason for recommending a 1 in 8 tincture in the first instance was for the purpose of comparing the relative activity of digitalis and strophanthus. It has been pointed out that the dose of this tincture was rather small for general practice, and for this reason the following formula is recommended:

Strophanthus seeds, deprived of their comose appendices, reduced to powder, and dried, 1 oz., or 1 part. Ether, freed from spirit and from water, 10 fl. oz., or 10 fluid parts. Rectified spirit, a sufficiency to obtain 1 pint (Brit. meas.), or 20 fluid parts.

Remove entirely the stalks and comose appendices from the seeds, reduce the seeds to a moderately fine powder, and dry the powder by exposing for twelve hours to a temperature of 100° or 120° Fahr. Pack in a percolator, the percolator being furnished with air-valves, or being otherwise so constructed that the percolation may be arrested when desired; add ether until the whole of the powder is saturated, and a small quantity of the ether has dropped into the percolator; arrest the percolation for twenty-four hours, and then continue percolating slowly until the whole of the ether has been used. If the last ether percolate should not be almost colorless, use more ether.

Remove the powder from the percolator; expose to the air, and break up any lumps after the ether has sufficiently evaporated; and continue the exposure, heating the powder, if necessary, to 100° or 120° Fahr.. until all the ether has evaporated, when a uniform, nearly white, dry powder may easily be obtained.

Repack the powder in the percolator, add enough rectified spirit to moisten it thoroughly; arrest the further flow of the spirit, and macerate for forty-eight hours: and pass rectified spirit slowly through until 20 fluid parts of tincture have been obtained.

In this process, the preliminary extraction with ether is for the purpose of removing the large quantity of inert oil contained in the seeds, which, if present in the tincture,

would cause it to become opalescent on the addition of water.

The dose of this tincture is from 5 to 10 minims. It may also be used in doses of ¼ minim to 2 minims, frequently repeated. It is nearly colorless, having a very pale-yellow tinge; neutral in reaction, and intensely and rather persistently bitter in taste. It mixes unchanged with water, is not precipitated by solution of tannin, but becomes markedly opalescent when ether is added to it. Solution of perchloride of iron intensifies its yellow color, and, at the same time produces a slight haziness in the solution; and, after some hours, the slightly opalescent fluid acquires a greenish-yellow color.

The chemical and pharmacological experiments which Professor Fraser has made show that the seeds contain a much larger quantity of active principle than any other part of the plant. The pericarp of the follicles, and the comose appendices of the seeds, contain a relatively small quantity, and the quantity is not the same in each part of the pericarp, and he expresses the opinion that the seeds furnish the most convenient and trustworthy preparations for therapeutic administration, and that they alone should be used for preparing the tincture.—*Chem. and Drugg.*

Note on Kamala.

A. G. PERKIN and W. H. PERKIN, Jr., have made a preliminary announcement of the isolation of a crystalline principle from *Kamala*. It was obtained in the following manner: Kamala, as finely divided as possible, is shaken with carbon disulphide. A portion of the former is thus dissolved. On concentrating the yellowish-brown solution on the water-bath, to a certain point, a yellowish-brown, gelatinous precipitate will separate on cooling. This is separated by filtration, treated with small portions of carbon disulphide in order to remove resinous impurities, and the residue then purified by crystallization from toluol or benzol. After two crystallizations from toluol, the new substance was obtained in small flesh-colored needles. For the present the authors have named this substance *mallotoxin*. Further details regarding its nature and properties are promised.

To Prevent the Capillary Creeping of Liquids.

WHEN liquids are filtered through paper, it often happens that the upper edge of the filter becomes encrusted with a mass of crystals or other solid matter, owing to the capillary ascension of the liquid to the edge of the filter, where it evaporates. If the filter lies close to the funnel, the solid matter will often creep over the edge. This may be prevented by adopting Gawalovski's suggestion, viz., to treat the edge of the filter with a solution of a substance entirely unmiscible with the liquid to be filtered. In the case of aqueous liquids, it is best to employ a solution of soft paraffin in ether, petroleum ether, or similar solvents. Where these are inadmissible, it is best to use an aqueous solution of gum arabic or some other gum, or a solution of starch, either alone or mixed with kaolin.—*Zeitsch. Anal. Chem.*

[This expedient is not new, being well known and in general use for preventing liquids, etc., from creeping over the edge of evaporating dishes.—ED. AM. DR.]

Note on some Oils of the Citrus Family.

P. SOLTSIEN has published the results of some investigations on the commercial oils of the citrus family, of all of which he employed samples of known purity. We abstract from his papers the figures relating to specific gravity (at 20°C. (68° F.)) and boiling point.

Oil of Lemon.—Sp. gr. 0.872; rectified oil 0.866.

Boiling P.: 170–176° C.; boiling begins at 170°–173° C.; at 176° the boiling point remains constant for a considerable time. The rectified oil has the constant boil. p. 164.5° C.

Oil of Bergamot.—Sp. gr. 0.878, 0.8772, 0.8776; rectified 0.8611.

Boil. P.: 183°–183.5°; rectified 169° C.

The pure oil has a wine-yellow color; the greenish tint is acquired by its being kept in copper. Oil of lemon does not assume a green tint under these circumstances; only after it has been exposed for some time to light and air, and has become acid and deposited a sediment, does it take up copper when in contact with it, assuming a bluish-green tint (the same as oil of turpentine.)

Oil of Sweet Orange (Oil of Portugal).—Spec. gr., from ripe fruits 0.8508; from nearly ripe fruits 0.8451; rectified 0.8420.

Boil. P.: constant at 174° C. In connection with these, the author also gives the corresponding values for some oils of turpentine.

American Oil of Turpentine.—Sp. gr. (at 20° C.), 0.8621, 0.8632, and 0.8675; (rectified not given).

Boil. P.: crude oil 156–158° C.; rectified 154–156° C.

French Oil of Turpentine.—Spec. gr. 0.8720; rectified, 0.866.—*Zeitsch f. Naturw.* [4], 5, 174.

Lamarck's Herbarium has been purchased by the French government for the Jardin des Plantes, from Mr. Roeper, a professor in Rostock, Germany.

A New Method of Crystallization.

IT has heretofore been generally held that the formation and growth of regularly-formed and large-sized crystals depended upon the degree of rest and the absence of disturbance during the process of crystallization. Dr. L. Wulff, of Gadebusch (Germany), has, however, found that a very uniform crystallization could be brought about by setting the respective liquid into a perfectly steady, continuous motion. He was led to this by theoretical considerations, which we regret to see omitted in the reports we have so far seen of the process.

The details of the process are in the main as follows:

The respective solution is cooled to the proper point of crystallization, and then mixed with slightly warmed small crystals or fragments of crystals of the same substance. The mixture is now set in rotary motion (in metallic vessels), at first very slowly, afterwards at an increased rate of speed.

During this motion, the crystals will continue to grow and form well-developed and often quite large crystals, particularly in the case of sugar or of ferricyanide of potassium. In the case of salts, such as borax, chloride of manganese, sulphate of copper, alum, tartar emetic, *perfect* crystals larger than peas may thus be obtained. In the case of others (sulphate of sodium, or of iron) the most perfect crystals are somewhat smaller.

When mother-liquors, in which more than one salt is contained, are to be brought to crystallization, they are mixed with crystals of the salt which will separate first and the rotation is continued until the next salt in the series of contaminations begins to separate. This will be in fine powder, as no crystals upon which it could continue to grow had been as yet put into the solution. The crystals of the first salt are then separated by a sieve from the powdery second salt.—*Pharm. Zeit.*

Court Plasters.

THE following method is that recommended by Eugen Dieterich:

1. *Plain Court Plaster.*

Sew together two meters of silk taffeta, each one-half meter wide, so as to form a piece of one meter square [or, prepare in similar manner, a piece of one yard square], and stretch it tightly upon a frame.

Cut 100 Gm. of best isinglass into small pieces, heat it twice on a water-bath, with a small quantity of water, evaporate the strained liquid to 600 Gm. and then add 2 Gm. of glucose.

To prevent the first application from soaking too far through the fabric, it should be applied cold, and in a cold room, by means of a hair-brush of at least two inches in breadth, care being taken that every part of the surface is coated only twice without pressure. Any apparent inequalities thus produced are equalized during the subsequent applications. These precautions must be observed during the first three applications, each of which, moreover, must be made in a direction diagonal to the preceding. Subsequent applications, likewise alternating in direction, may be made in a moderately warm room, and must be continued until the mixture is consumed. Should anything be left over, not sufficient for a whole application, it is to be diluted with a little water to make a sufficiently large volume. Each subsequent application must be made only after the preceding one has become completely dry.

Finally, while the fabric is still stretched over the frame, the back is coated with tincture of benzoin diluted with an equal quantity of alcohol [some use a colorless resin in solution]. When dry it is removed from the frame, the seam is cut out, and the plaster rolled up so that the spread surface is on the outside.

2. *Arnicated Court Plaster.*

Proceed as in the before-mentioned process, except that the solution of isinglass is divided into two halves, the first of which is applied as such, while the second is mixed with 50 Gm. of tincture of arnica.

3. *Benzoated Court Plaster.*

Prepared like the last, only that 2 Gm. of benzoic acid dissolved in alcohol are added, instead of the tincture of arnica.

4. *Salicylated Court Plaster.*

Like the preceding, except that 2 Gm. of salicylic acid dissolved in alcohol are used here.—After *Pharm. Centralh.*

Remedy for Neuralgia.

DR. JOHN T. METCALFE, a well-known physician of New York, writes to the *Boston Medical and Surgical Journal* that the following formula was learned by him from one of his patients whom he had sent to Cuba with the hope that a change of climate would afford relief from sciatica. A French physician who there attended him used this remedy with the best results, and Dr. Metcalfe has tried it so often since with success that he speaks of its value with great confidence.

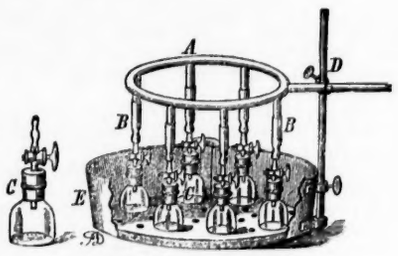
Equal parts of the tinctures of aconite root, colchicum seeds, belladonna, and actæa racemosa. Six drops to be taken every six hours until relief is felt.

The doctor says that "as an internal remedy it is worth all others put together of which I have knowledge."

DRYING APPARATUS.

THE apparatus here illustrated is used in many French laboratories, and consists of a circular metallic tube, to which are attached a number of arms, each provided with a stop-cock, which are connected with small, wide-bottomed flasks (the so-called weighing bottles will answer well). A horizontal prolongation of the circular tube is connected with an exhaust or vacuum pump, and at the same time serves for adjusting the whole arrangement at any desired height upon a retort-stand.

When viscid or syrupy liquids are to be brought to a dry extract, it is advisable, first, to deprive them of most of their water by evaporation in open vessels, and then to transfer an aliquot, but weighed portion of the residue into the bottles, where they are further dried by immersing them into a water-bath, and then opening the stop-cock, so that the hot vapors given off may be aspirated.—*Dingler's Polyt. Journ.*, 262, 267.



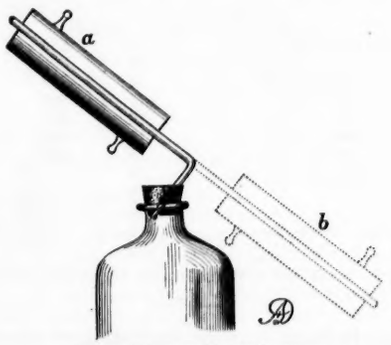
Laboratory drying-apparatus.

REVERSIBLE CONDENSER.

H. MICHAELIS publishes a simple method by which a condenser may be made to assume either an upward or a downward direction, according as it is required to serve as a reflux-condenser, or for distilling off a liquid.

If it is required for the first-mentioned purpose, when the condensed liquid is required to flow back into the flask, it is inserted into the cork closing the neck of the latter in the manner shown by the position at *a*; the neck of the condenser, which is bent at a right angle, passing through the cork at an angle of 45 degrees. When the operation is completed and the liquid is to be distilled off, the condenser is merely turned about its axis until it occupies the position at *b*, indicated by the dotted lines.—*Rep. d. Anal. Chem.*, 1887, No. 4.

[NOTE BY ED. AM. DR.—We may add that an arrangement of precisely the same nature has been used by us for a long time. It is one that would naturally suggest itself to different operators independently of each other.]



Michaelis' reversible condenser.

AN IMPROVED THERMOMETER.

WHEN it is desired to make the reading of a thermometer visible at a considerable distance, the method of construction recently described by Friedrich C. G. Müller may be used. The chief object in designing this was to enable the whole audience at a lecture to distinguish the rise and fall of the column within the thermometer. This was accomplished by selecting sulphuric acid as the liquid, in place of mercury, the former having a coëfficient of expansion three-and-a-half times in excess of that of the latter. The annexed cut shows the appearance of the instrument. The tubing has a bore of 0.8 *mm.* The bulb is 25 *mm.* long and 10 *mm.* in diameter. The scale is drawn on card-board, bent at an angle of 120°, so that it may be seen from both sides. Every tenth degree is marked by a heavy black line, and the intermediate degrees (though they may be read off on the scale) are easily estimated by guessing. The fields of the decades immediately below 0°, 100°, and 200° are tinted carmine, those at either side of 50° and 150° green.

The accuracy of an instrument of this kind has been tested by comparison with mercurial thermometers.—*Ber. d. D. Chem. Ges.*, 1886, 2175.

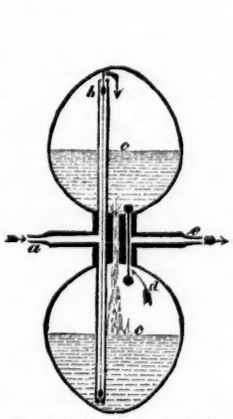
PFRENGER'S DROP-COUNTER.

DROP-COUNTERS appear to be a favorite object of the inventive genius of pharmacists at the present time. To those illustrated heretofore, we add now another, some time ago devised by Pfrenger, and for which a patent has been applied for. Its construction will be understood by examining the cut. The stopper of the bottle consists of two parts, the long hollow tube, *b*, which forms the stopper of the bottle itself, being ground at its upper exterior surface to fit the neck of the bottle. A separate stopper, *c*, fits into this. Near the contracted end of *b* is a small orifice *c*, through which the liquid in the bottle may enter the interior of the stopper, while a small hole both in *c* and *b* at one side of the neck *a* permits the entrance or escape of air, when the inner stopper is turned so that the two holes coincide. Under ordinary circumstances, when liquid is to be poured from the bottle itself, the stopper is turned so that the holes do *not* overlap. Hence the long stopper *b* may be lifted out and held in one hand in the usual manner, without risk of losing any drops of liquid. If drops are wanted, the long stopper *b* is held in one hand and the smaller stopper *c* turned until the holes meet, when the liquid will be delivered in drops.—After *Pharm. Zeitung.*

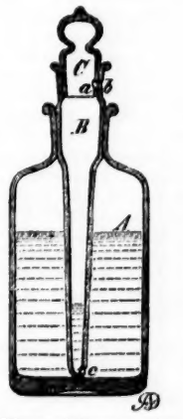
A DOUBLE ASPIRATOR.

A VERY serviceable and compact form of double aspirator, which is set in motion merely by turning over, is that constructed by Gawalovski. It resembles that of Muencke, described and illustrated by us in NEW REMEDIES, 1877, p. 196.

Its mode of action is easily understood from the illustration. While the contents of the upper reservoir flow into the lower, the external air is aspirated through the hollow axle *a*, and the air contained in the lower vessel is expelled through *e*. By connecting the latter orifice with a blast lamp, the jet of air may be utilized in glass-blowing or other operations.—*Chem. Centralbl.* and *Zeitsch. f. anal. Chem.*



Gawalovski's double aspirator.



Pfrenger's Drop counter.

A Japanese Pharmacopœia.

JAPAN has adopted another mark of Western civilization, and has now an official pharmacopœia. The work is the compilation of a committee appointed in 1880, consisting of twenty-one members, the majority of whom were natives, but including such Europeans as the late Dr. Geerts, Dr. Eykmann, Dr. Laggard, and Dr. van der Heyden. The work, which consists of nearly four hundred octavo pages, is described as being divided into three parts, the preface contains a history of the proceedings of the committee and the rules followed in the compilation, together with definitions of the principal techni-

Müller's improved thermometer.

cal and other terms used. It is also therein stated that the work was originally written in the German language, as being understood by most of the members of the committee, but that, nevertheless, the Japanese version is to be considered the official text. It is intended to publish the work eventually also in Latin.

The Pharmacopœia contains 475 articles, nearly all of which are official in the British, German, and United States Pharmacopœias. Each article is arranged in alphabetical order according to the Latin name, but this is preceded by the Japanese name. The Latin nomenclature adopted resembles pretty closely that of the British and United States works, but shows traces of German proclivities in the use of such forms as Kalii, Natrii, and Chininum. Under the title of each article is given a description of its appearance and taste, tests for its purity, and method of preparations. In the formulæ for compounds the proportions are given in parts, but the metric system forms the basis of all measurements. The appendix contains lists of dangerous and powerful remedies, doses, solubilities, etc.—*Pharm. Journ.*

Wine of Cinchona.

THE *Pharmaceutische Rundschau* (Prag) has a short article on wine of cinchona, in which it is stated that the cause of the precipitate frequently occurring in this preparation is the cinchona red [which itself is closely related, chemically, to cincho-tannic acid]. When this substance is removed, the cinchona wine will remain clear. The author next quotes one of the formulæ for this preparation proposed in the Preliminary Draft of a National Formulary, in which the bark is mixed with lime and water, dried, and then extracted with alcohol, whereby all the tannic acid is removed, and the alkaloids are extracted. It would appear, however, according to Prof. Liebreich, that such a preparation is not exactly what the physician wants. The latter does not use it so much on account of its alkaloids as for the cincho-tannic acid it contains. We had better quote Prof. Liebreich's own words (from *Therapeutische Monatshefte*, No. 1):

"Nobody will want to use wine of cinchona as an agent to lower the temperature of the body. For such purposes we employ quinine in large doses. In treating malaria, the same principle prevails.

Cinchona wine is useful as a *bitter tonic*.

Though we have not yet arrived at the end of the study of the bitter tonics, yet it is certain that they cause an increased secretion of saliva, while the mucous secretion in the stomach is diminished and the appetite is augmented. They also probably prevent abnormal decompositions of the food in the stomach and intestines. Hence we observe that wine of cinchona is beneficial in feeble digestion affecting the whole intestinal tract, such as may occur in anæmic patients after acute diseases. An addition of *glycerin* to wine of cinchona *neutralizes* its *tonic* effect.

If we examine the methods used by pharmacists in preparing wine of cinchona, we find that they consider the extraction of the alkaloids to be the principal aim, while the extraction of the important cincho-tannic acid appears to be overlooked. Moreover, with a view to prevent the precipitation of alkaloid in the finished wine, the proposition has been made to make it with the aid of glycerin—as much as 20% in the finished product. It is quite proper to add glycerin to solutions of digestive ferments. But these solutions are used for entirely different purposes, therapeutically, from wine of cinchona. Up to the appearance of the 2d ed. of the Germ. Pharm., German physicians have been accustomed and satisfied to prescribe "wine of cinchona," and not "glycerin-wine of cinchona," and we did not care in the least whether any of the alkaloids had separated out or not. The new pharmacopœia has altered all this by giving us a remedy which has to be tested anew as to its therapeutic action."

Liebreich quotes three old processes for preparing cinchona wine, any of which he appears to prefer to the officinal one:

1. Cinchona, in coarse powder ..... 1 part.
   White wine.....12 parts.

Macerate 24 hours, frequently shaking; then filter. (*Dispensatorium Fuldense*, 1791.)

2. Cinchona in powd..... 1 part.
   Madeira wine.....16 parts.

Macerate (cold) during 4 weeks, express and filter. (*Van Mons*, 1821.)

3. Cinchona in powd..... 64 parts.
   Alcohol..... 125 "
   Good red wine.....1,000 "

Macerate the cinchona for 24 hours in the alcohol, then add the wine; macerate for eight days, shaking from time time, strain, express and filter. (*Codex*, 1839.*)

Improved Method of Preparing Tannate of Quinine.

THE published methods for preparing tannate of quinine—which is so much in demand as a tasteless quinine salt—have nearly all of them the drawback that they start from the commercial sulphate which is to be dissolved in sulphuric acid. The presence of this excess of acid, however, causes a great loss of alkaloid, both during the precipitation and the subsequent washing. Mr. P. J. Haaxman now recommends the following improved method which was specially designed to avoid this loss.

Dissolve 20 parts of bisulphate of quinine, with the aid of a gentle heat, in about 100 parts of distilled water, and dilute the solution with distilled water to about 1,000 parts. Mix this solution with another prepared from 40 parts of crystallized carbonate of sodium in about 160 parts of distilled water, collect the precipitate, wash it with cold water, press it gently, and dissolve it while still moist in 200 parts of strong alcohol. If necessary, filter the solution and add it drop by drop, and under stirring, to a cold-prepared, filtered solution of 60 parts of pure tannic acid in 1,000 parts of distilled water. Let the mixture stand a few hours, stirring now and then with a glass rod, pour off the supernatant liquid as much as possible without loss of material, and collect the precipitate in a dense, moistened linen strainer stretched over a frame. Wash it with a little water at a time, until the washings possess only a slightly astringent taste, after which it may be dried without heat.

The quality of the product depends much upon the method of drying, for which reason the author gives special directions as to the latter.

The voluminous precipitate collected upon the strainer still contains, even after draining a long time, a large quantity of liquid holding tannic acid in solution. If this were left in the mass, the latter would, on drying, possess an astringent taste. The author prefers to press the strainer gently in the manner usual with voluminous precipitates which part with their water slowly.

This is done by placing a pad of filter-paper upon a board of about the size of the strainer, then putting the latter, tied in shape of a bag, upon it, and placing on top another pad of filtering paper and board. A weight is placed on top of the latter. After a short time the lower pad of bibulous paper will be quite saturated with the liquid. The whole pile is then reversed and a new pad introduced. This is continued until the filtering paper ceases to take up any moisture. The strainer is then laid upon a horse-hair sieve, the contents equally distributed, the sieve covered with paper and suspended in a suitable place until the contents are dry.

When a larger quantity of the salt is to be prepared, the alcohol which has been used may be recovered by distillation from the first rejected liquid.

If direct heat is avoided in the preparation, the tannate of quinine will have a light yellowish-white color.

A recent lot prepared by the author of this method was found to contain, by assay, 21 per cent of anhydrous quinine.—*Nieuw Tijdschrift voor de Pharm. in Nederland*, 1886, 395.

* In quoting this formula after Gray's Supplement, Dr. Liebreich slightly altered the proportions which we have restored.

The Solubility of Certain Quinine Salts.

J. REGNAUD and E. VILLEJEAN have made a series of new determinations of the solubility of certain salts of quinine. Two kinds of each of these salts were examined. In one case the salt conforming to the requirements of the French codex was taken, and in the other case a specially prepared salt, made by carefully saturating absolutely pure quinine (made from iodo-sulphate, or herapathite) with just enough pure acid. The following table contains a portion of the results obtained. It will be seen that there is considerable difference in some cases. The salts prepared by the authors themselves are distinguished by the letters R. & V., the officinal salt by "codex."

Salts of Quinine.	Temp. C°	Quantity of Dist. Water required to dissolve the Anhyd. Salt.	Hyd. Salt.
Hydrobromate, basic, R. & V.	13	50.36	48.14
" " Codex.	15	47.05	45.02
" neutral, R. & V.	14	7.58	6.82
" " Codex	15	7.04	6.33
Hydrochlorate, basic, R. & V.	15	23.53	21.40
" " Codex	12	26.10	23.73
" neutral, R. & V.	15 (about)	.....	0.66
Salicylate, basic, R. & V.	15	886	86
" " (after Codex).	10	...	900
* Sulphate, basic, R. & V.	14	719	615
" " "	15	680	581
" " "	16	654	559
" " "	17	640	547
" " "	18	626	533
" neutral, "	15	11.77	8.81
" " "	17	11.24	8.62
" " "	18	10.40	7.51
Valerianate, basic, "	12	38.40	
" " "	16	58.70	

—After *Journ. de Ph. et Chim.*, 1887, Jan.

Cinchona in India.—At the suggestion of the Surgeon-General of Her Majesty's forces in India, the Government there have resolved to make trial of the fluid extract of cinchona in Upper Burmah. Much inefficiency among the troops there is due to fever, and it is thought that the fluid extract may prove more useful than quinine or the well-known cinchona febrifuge, which is a mixture of the whole of the alkaloids of the bark. Mr. David Hooper, the Government quinologist, has been directed to manufacture a supply of the extract, and it is proposed to make a free distribution of it from dispensaries for a year, so as to determine its usefulness or otherwise. In the revised minute of the retiring Governor-General (Mr. Grant Duff) it is stated that Mr. Hooper has produced the fluid extract at an astonishingly low price, and that a bottle containing eight doses will be sold at one anna (about 1½*d*).

A New Wound Dressing.—The *Journal de Médecine* gives the following formula for a substitute for collodion and chloropercha, which is said to cause no inflammation, and to relieve pain:

Mastic, in globules, 3 grammes; balsam of Peru, 1 gramme; chloroform, 5 grammes. The mastic having been powdered, is mixed with the other ingredients in a stoppered bottle and shaken from time to time until solution is effected. It is applied directly to the surface of the skin or on strips of linen or silk, like court-plaster.

A NEW EXTRACTION APPARATUS.

DR. L. LEWIN * has constructed an improved extraction apparatus, which permits extraction, not only with hot but also with cold solvents, and also the recovery of the menstruum by direct distillation. At the same time it is easily put together or taken apart.

The apparatus consists of three principal parts:

C a boiler made of tinned copper.

B an extraction cylinder of copper, which does not rest upon the copper-boiler, but has at its lower end a hollow space communicating with the external air. Inside of the cylinder are three removable diaphragms, which serve for supporting the substances to be extracted. At the lower end of the cylinder is the receptacle for the extract. The bottom of the cylinder is inclined, and the hollow space below it helps to keep this cool.

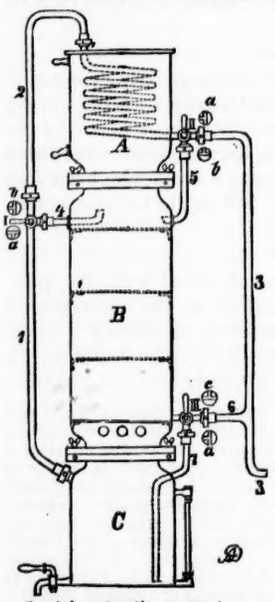
A the condenser.

The whole apparatus hangs in a tripod.

1. *Continuous Extraction with Hot Solvents.*—In this case, the vapors of the menstruum pass out from the boiler *C* through tube 1, pass through the three-way cock *I* (in the position shown at *a*), through tube 4 into the extraction cylinder *B*, penetrate the substance contained therein, and are then condensed. The saturated menstruum collects in the lower part of the cylinder, and from there passes into the boiler through the three-way cock *III* (turned as shown at *a*).

In order to avoid too high a pressure in the apparatus during this operation, tube 2 is screwed off, and the three-way cock *II* turned in the position shown at *a*. This enables the uncondensed vapors to find their way into the condenser, which thereby acts as a safety valve.

2. *Continuous Extraction with Cold Solvents.* — In this case, the vapors from the boiler *C* pass through tube 1, next through the stop-cock *I*, turned in the position *b*, through the tube 2 into the condenser. From here the condensed liquid flows through stop-cock *II* (turned as shown in *a*) into the cylinder, permeates the substance, and finally reaches the boiler, as in the previous case.



Lewin's extraction apparatus.

3. *Recovery of the Solvent.*—The vapors pass from the boiler through tube 1, the stop-cock *I* (turned as in *a*), then through tube 2 into the condenser. From there through the stop-cock *II* (turned as in *b*) into the exit tube 3, which may be lengthened as desired.

4. *Other Conveniences.*—By turning the stop-cock *III* into the position shown in *c*, the extract may at any time be drawn off through the tubes 6 and 3. Moreover, new menstruum may at any time be added, after removing tube 2, through the stop-cock *I* turned as in *b*.

The boiler *C* may either be heated by a naked flame, or it may be provided with a steam-jacket.

[*Note by Ed. Am. Drugg.*—Instead of having a steam-jacket permanently connected with the apparatus, it may be set into a copper or iron basin (such as the usual water-baths), into which a moderate current of live steam is allowed to enter, provision being at the same time made for the escape of the condensed water.]

Dr. Lewin recommends a definite proportion, in capacity, between the boiler, extraction cylinder, and condenser, namely, 2 : 4 : 3.

The apparatus is made for sale by Gustav Christ (formerly Christ and Schalles), of Berlin, Schmidstrasse 33.

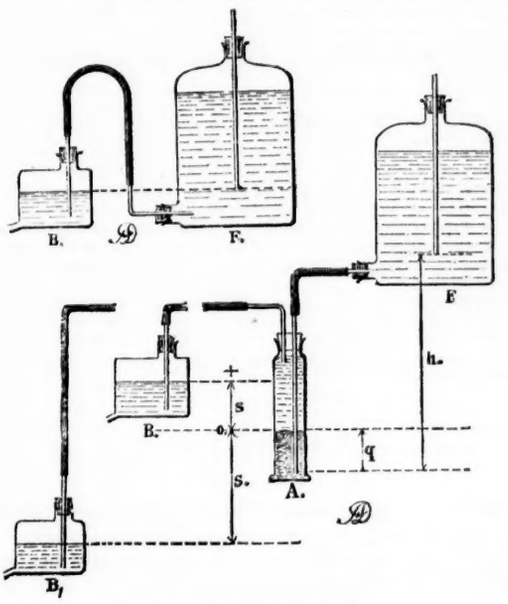
SELF-FEEDING SPIRIT LAMPS.

R. BENSEMANN describes an apparatus which he has employed for a number of years for the automatic supply of spirit-lamps in laboratories where illuminating gas is not available, or when the latter is otherwise objectionable.

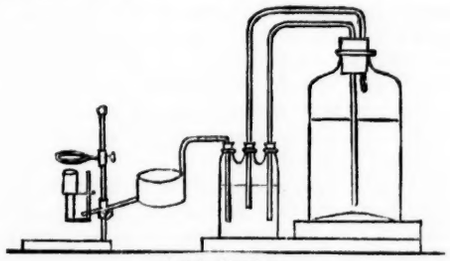
F is the reservoir, *A* is the levelling flask, being partly filled with mercury and having two tubes passing through the cork. *B* is the tank of the alcohol lamp. [The same apparatus can also be used for preserving a constant level in a water-bath. In this case the alcohol is merely replaced by water, and *B* then represents the water-bath.] The level of the liquid in *B* is regulated by the rate of immersion of the tube dipping into the mercury in the flask *A*. If the apparatus is to be started, this tube is drawn so far out of the mercury, until the liquid from *F* begins to flow, and the proper level has been attained in *B*. The tube is then pushed into the mercury far enough to just stop the further flow of liquid. As long as none of the liquid in *B* is consumed, there will be no further action. But if the level in *B* at any time descends, more liquid will pass down the tube dipping into the mercury, and replenish the consumed portion.

The lamp may, of course, stand at any lower level, for instance in the position shown by *B*. In this case it will only require a deeper immersion of the tube in the mercury to bring about the same action.

A still more simple arrangement can be made by omitting the flask *A* altogether, and connecting *B* directly with *F*, as shown in Fig. 2. The proper level is then brought about by the depth to which the tube entering the reservoir *F* is pushed into the latter. The apparatus is started by blowing air into the open tube until the proper level in *B* has been attained. The cork in the neck of the latter serves merely to hold the siphon tube in place; it must not fit tight [or is best provided with a lateral notch to admit air].—*Rep. f. Anal. Chem.*, 1887, No. 1.



Bensemann's self-feeding lamp.


Self-feeding lamp.

THE following described arrangement will be found serviceable in laboratories where illuminating-gas is unobtainable. The reservoir holds about ten or twelve pints, and is best placed in such a manner that no damage may happen through its accidental breakage. It is closed with a doubly perforated cork bearing two glass-tubes connected with a three-neck Woulff's bottle and the latter again with a small metallic reservoir to which the lamp is attached. When alcohol is burned in the latter, the supply in the metallic reservoir is drawn upon, and as the level of the latter descends, so will the level in the Woulff's bottle. As soon as the obliquely cut-off end of the central tube in the latter becomes exposed, the air space over the alcohol will be set in communication with that in the reservoir, and in consequence of this, alcohol will flow into the Woulff's bottle through the siphon-tube. As soon as the outlet of the central tube is again covered by alcohol, the flow of the latter will cease. The supply of the lamp will thus be renewed periodically until the level of the alcohol in the reservoir becomes equal to that in the three-neck bottle.—*Rep. f. Anal. Chem.*

Paraffin, with a melting point of 130°, is recommended by a writer in the *Provincial Med. Jour.* as a substitute for plaster-of-Paris in surgical dressings. It does not absorb purulent matter like the latter; is lighter, easily managed, and is equally serviceable for splints or spinal jackets.

* "Ein neuer Extractionsapparat." Von DR. L. LEWIN, Docent der Pharmakologie an der Universität Berlin. 8vo. Halle a. S., 1887. (Received from the author.)

THE

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FRED'K A. CASTLE, M.D. ..... EDITOR.
CHAS. RICE, PH.D. ..... ASSOCIATE EDITOR.

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EDITORIAL.

THE leading manufacturers of perfumery are constantly on the watch for new sources of staple aromatics, or for new odorous substances. During the last year or so we have met with numerous statements of new discoveries in both of these directions. The most interesting have been that of a plant in the district of Chirigui, in Costa Rica, having an odor very much resembling that of the *Cananga odorata*, the source of the delightful ylang ylang. The plant is supposed to be a species of *Xylopia* (nat. fam. Anonaceæ), a genus which is characterized by the pungent and aromatic odor and taste of its fruits, seeds, etc. So, for instance, *Xylopia æthiopica* is the source of a peculiar variety of Melegueta pepper. Whether the above-mentioned Costa-Rican species will be able to become a rival of *ylang*, time will show.

Another interesting plant likely to become the source of a valuable perfume is the *Ouco* found by Serpa Pinto, on July 25th, 1878, in his expedition across the continent of Africa. After having passed to the right bank of the Cuchibi, he entered a territory extending to the river Cubangui, which was covered with a dense virgin forest containing, according to Pinto, an extraordinarily rich flora. While passing through the forest he noticed a most agreeable, sweet odor which was found to arise from a tree abundantly growing there. According to his own statement, the fine fragrance of this odor exceeds that of any odoriferous plant growing in Europe. It is called *Ouco* by the natives. Pinto thought it was a kind of *Acacia*. When he exhibited the drawing of the tree and of its flower to a Portuguese pharmacist upon his return to Europe, the latter declared it to belong to the Leguminosæ, tribe Papilionaceæ. Serpa Pinto concludes his description with the following words: "This tree, for the superbly fragrant flowers of which many a European lady would pay a high price, was only found in this locality; when I afterwards approached the river Ninda, I searched for it in vain. [The geographical position of the territory alluded to is in lat. 40° 30′ South, and in long. 20° 30′ East of Greenwich approximately.] Subsequently, however, while passing a short distance to the south of the Ninda, he again encountered the Ouco as a "large tree and growing so luxuriously, and so abundantly covered with flowers, that the traveller finds himself for hours in an atmosphere of almost overpowering aroma."

Modern enterprise will probably try to benefit by Serpa Pinto's report. It will not be long before the locality will be visited by agents of some of the houses interested in new valuable plants.

AN interesting subject for investigation by social scientists is the frequent occurrence of poisoning in Great Britain and in England especially. Hardly a medical or pharmaceutical journal comes to hand which does not contain accounts of a number of such cases, and the majority of them seem to be the result of pure stupidity, either inherent or acquired through over-indulgence in beer or liquor. To judge from the observations of travellers and the statements of journals regarding the consumption of alcoholic drinks, it would appear that the majority of the laboring and middle classes of society must be much of the time in a more or less fuddled condition from the alcohol taken in one form or another. The published accounts of poisoning cases would also encourage a belief that carbolic, hydrochloric, and oxalic acids and similarly deadly substances are to be found in nearly every household, and that the common receptacles for them are ginger-beer bottles without labels, broken pitchers, or other household utensils.

The average Briton seems to be a thirsty mortal and inclined to gulp down anything that may by chance come first to hand. The fact that the container is a beer-can or a beer-bottle is, for him, presumptive evidence that its contents are potable.

THE existence of voluminous laws regulating the sale of poisons appears to have little effect upon their presence in the household. The "chemist" is hedged about by restrictions to the sale of poisons, but the oil-man next door may give a pint of oil of vitriol to a child who brings an earthen beer-mug to receive it, and needs to ask no questions.

ANOTHER important feature connected with the question of poison-vending in England is the existence of what is known as a "stipendiary magistrate" whose ideas of the law are well illustrated by the following extract from an editorial in *The Medical Press and Circular:*

"A druggist was summoned under the Sale of Food and Drugs Act, at the instance of the Health Committee, for having sold tincture of opium which was not of the nature, substance, and quality of the article demanded. The medical officer of health proved that he purchased at the defendant's shop three ounces of tincture of opium. The borough analyst certified that the proportion of opium in the sample was less than one-third of that contained in the tincture of opium of the British Pharmacopœia. The facts were admitted by the defendant, but the stipendiary said that no doubt the action of the Health Committee was very laudable, but he was of opinion that if a preparation contained *any opium and any alcohol whatever* it could legally be sold as tincture of opium. Another shopkeeper was summoned under the same Act for having sold paregoric elixir, which, according to the certificate of the borough analyst, was "wholly destitute of opium, which was the most important ingredient of paregoric elixir." The vendor said that he supplied shopkeepers with the article complained of, so that they might not infringe the Pharmacy Act, they having no license to sell poisons. He could not name any ingredient of a medicinal value that the paregoric without opium supplied by him contained. The stipendiary said the name "paregoric" failed to give him any definite impression any more than soothing syrup. It was pointed out that, for all the defence amounted to, they might simply sell colored water, and call it paregoric. The stipendiary said he did not see that the law prevented it, and dismissed the case."

Making due allowance for lapse of time, the character of Dogberry in "Much Ado about Nothing" would seem to represent the "stipendiary magistrate" of the present day fairly well.

READING between the lines of the above extract, we will observe that shopkeepers who are not licensed to sell poisons *may* sell things called by the same names so long as they are not what they purport to be. On the other hand, a person who *is* licensed to sell poisons *is* liable to prosecution and punishment if he sells things which are not what their names would indicate. Taking it for granted that legislation having for its object the control of the sale of poisons originated with the class who suffer most from the legal restrictions, the pharmaceutical profession of Great Britain is not in a position to be congratulated upon the results of its efforts to aid the public.

EXPERIMENTS have been made in Java to prepare an extract of cinchona containing all the alkaloids, which is to be shipped abroad and sold to the makers of quinine. This is certainly a step in the right direction, as it will do away with the useless expense involved in the carriage of a large bulk of inert matter.

For the first experiment, 10 kilogrammes of bark were selected, containing fully 6 per cent of alkaloids. By means of quick-lime and extraction with boiling alcohol, a concentrated alcoholic extract was prepared which, by analysis, was found to contain about 60 per cent of alkaloids, the residuary mass being almost entirely exhausted. This extract is provisionally called *Quinium*. It has been sent to the Netherlands for the purpose of ascertaining whether it can be practically used in the manufacture of cinchona alkaloids.

THE *Indian Agriculturist* says:

"A local contemporary announces that the Government of Madras is apparently about to withdraw, partially, from competition in the growth of cinchona, and that at the request of the Director of Cinchona Plantations, the Collector of the Nilgiris has been instructed to dispose of the Kalhati Gardens by the end of the year. This is a step in the right direction, and we hope before long all Government cinchona plantations will be disposed of, retaining only such, if necessary, upon which it is intended to conduct special experiments."

THE spook of the "artificial quinine" said to have been discovered by Dr. Hewett, and ostensibly supported by the pretensions of the "Atlas Quinine Company" (Creswell, Hewett & Co.), of London, has not yet been laid. We see reports, here and there, which go to show that the company has more to conceal than the pretended process of manufacture. So far we have not found reason to place the slightest credence in the assertions of the company, though we do not in the least doubt that the time is not far distant when artificial quinine will be a regular article of commerce.

THE town of Toulouse is about preparing an international exhibition, which will be opened on the 15th of May next. The guaranteed capital is 700,000 francs. Chemists and druggists wishing to exhibit should make their demands to the Maire de Toulouse, when the printed forms and official journal of the exhibition will be sent gratuitously.

Clause 44 of the regulations reads:—Chemical and pharmaceutical products, acids, alkalies, salts of all kinds, sea salts and products from sea water, various productions of chemical industry, wax and fatty bodies, soap, candles, materials of perfumery, resins, tar and bodies derived from tar, varnishes, dyeing substances, simple and compound medicaments of pharmacy.—*Canad. Pharm. Journ.*

The Canadian Practitioner says:

"It may not be generally known that a poultice of digitalis leaves, to cover the whole abdomen, will act both on the heart and kidney in scarlet fever or other conditions, when its administration by the stomach is contra-indicated."

We confess that the thing is novel to *us*. Indeed, we never heard before of a poultice of digitalis leaves being administered by the stomach.

SEVERAL of our medical exchanges have lately contained editorial articles on the subject of substitution by apothecaries, which seem to have had their origin in a similar editorial article in the *St. Louis Medical and Surgical Journ.* for March. These writers assume as a fact that such substitutions are sufficiently common to be a source of general complaint on the part of physicians and manufacturers of "specialties."

Without committing ourselves to an indorsement of this assumption, we nevertheless desire to express our unqualified condemnation of any such practice. There is nothing which will so completely destroy confidence in a pharmacist's integrity and so permanently injure his business as a *suspicion*, even, that he will intentionally substitute something else for the *particular* thing demanded; and for this reason alone, to say nothing of the moral principle involved, a pharmacist who will intentionally commit such a fraudulent act had better sell out his establishment and retire from the business while its good-will has still a pecuniary value. It is far more sensible to say, at once, in case the article ordered is not in stock, that he has not got it. The profit which might have been gained is more than counterbalanced by the reputation which will be acquired for honesty.

WE remember an account once given us by a physician, of his efforts to secure a quantity of *Clutterbuck's* elaterium for a patient, and of the various ways in which one apothecary after another endeavored to supply something else, until he finally came to one who frankly confessed that he had not got it and, what was more to the point, did not know of any one who had any that was of any value; however, if the doctor was willing to leave the prescription with him he would get some of Clutterbuck's elaterium, if it was to be had, and if he failed he would send the doctor word to that effect. The doctor was so impressed by the apothecary's frankness and honesty that he accepted an article which was not Clutterbuck's, but which was thoroughly reliable and did its work well, and we have reason for believing that many prescriptions from that doctor and his friends have since gone on that apothecary's prescription files as a direct outcome of that interview.

THE statement that the article on Fuller's Tablets, published in the January number, would be continued was a mistake; the article, as it stands, contains all the information necessary for their manufacture. Those who have made the tablets on a large scale have acquired skill in certain details which it might be desirable to know, but which we have no right to publish without their authorization. If, however, any of our readers *desire* such additional information, we will gladly undertake to obtain it for them if they will kindly state in what particulars they wish more complete directions.

WE may remark that three stages of the manufacture demand special attention. 1. Accurate adjustment of the proportion of the ingredients so that the tablet shall contain a known quantity of the drug; 2. Thorough trituration of the drug with the milk-sugar; 3. Complete desiccation of the tablet after its removal from the mould.

WE have learned since the publication of the article, that Mr. John E. Schreck, of the firm of Boericke & Schreck, 234 Sutter st., San Francisco, manufactures an improved triturating machine, and tablet plates of glass, which are thought by him to possess advantages over those made of hard-rubber.

College of Pharmacy of the City of New York.

THE annual meeting of this college took place on March 17th. The following officers were elected at this meeting: *President*, Ewen McIntyre; *Vice-Presidents*, H. J. Meninger, Gust. Ramsperger, G. C. Close; *Treasurer*, David Hays; *Secretary*, J. N. Hegeman; *Trustees*, to serve three years: Gust. Balser, Th. F. Main, D. Peraza, Th. Louis, J. R. Caswell.

The examinations of the junior and graduating classes were held during the week from March 13th to 19th. The practical examination of the senior class in analytical chemistry and in pharmaceutical manipulation had already been completed during the preceding week.

The total number of students in the junior class was 172. Of these, 149 presented themselves for examination, and 126 passed successfully.

The senior class comprised 110 members. Of this number, 2 completed their examination in all branches but pharmacy. Of the remaining 108 candidates, 81 passed the examination successfully.

The commencement exercises will take place at Steinway Hall on Tuesday evening, March 29th, 1887. As we go to press before that date, we anticipate only so far as to publish a list of the graduating class and the prize and honor men.

Graduates of the Class of 1887:—Y. J. Wulling, *first prize;* H. F. Koester, *second prize;* A. A. Herzfield, *third prize.*

Roll of Honor:—R. Dolmetsch, Ph. Asher, F. A. Roda, F. C. Seither, A. Metz, H. Weller, W. Heuser, H. W. Schimpf, E. Huth, G. A. Schumacher.

The other graduates are:—Th. B. Aitchison, J. Alvarado, A. Ammon, F. C. Atwater, L. F. Beagle, J. F. Behrens, E. L. Blanding, J. F. Bruning, H. W. Carr, C. H. Carroll, F. T. Dall, Ch. W. Dietz, R. P. Domschke, J. Duryea, H. F. Eichacker, G. R. P. Ellison, Ch. H. Everest, A. F. Eyssell, O. Eyssell, E. L. Fendler, M. Fleischmann, I. M. Foster, W. George, H. A. Goddard, M. F. Guck, F. Haessig, F. L. Harding, M. Hollander, W. S. Hopkins, H. G. Ihlefeld, A. S. James, Ch. L. Kellogg, L. P. Knapp, P. H. Koechert, W. O. Kolbe, J. I. Laurie, W. Mayerhofer, D. M. McLeod, F. B. Meeker, R. Minrath, A. J. Muldoon, E. Mulvany, Ch. Motschenbacher, A. C. Naumann, H. Ost, J. Ottendorfer, Jr., A. R. Pardington, H. E. Reed, G. G. Reeder, E. Rindermann, E. C. Roller, J. G. Sauer, F. R. Schlesiger, H. Schmidt, M. S. Settle, J. T. Shillinglaw, G. W. Snedeker, J. Stahl, Jr., A. A. Sterne, F. B. Thibon, G. M. Uhlig, J. R. Vahlteich, E. A. Vockroth, J. H. Vogt, H. G. Wenzel, R. E. Wilhelm, Ch. Wilkens, U. B. Woolly.

Chicago College of Pharmacy.—Forty-four graduates received diplomas at the twenty-second annual commencement of the college in February.

N. J. Pharmaceutical Association.

THE N. J. Pharm. Association has leased Washington Hall, Paterson, N. J., for their next meeting, March 25th and 26th. It contains a fine room for exhibits, and the association intends to make this a special feature of their meeting. To this end, they will have the exhibit open not only to the members and visiting pharmacists, but will also arrange for its inspection by the physicians, schools, and the public generally. Space for exhibits may be secured by addressing C. P. Kinsella, Paterson, N. J., and should be engaged at once, as it is limited. This meeting promises to be one of great interest, and will no doubt be very largely attended.

Philadelphia College of Pharmacy.—The sixty-sixth annual commencement of this school was held on the 18th of March, and diplomas were awarded to one hundred and forty-eight candidates.

The twenty-third annual reception by the alumni to the sixty-sixth graduating class of the College of Pharmacy was held on Thursday evening in the hall of the Academy of the Fine Arts, and was largely attended. The introductory remarks were made by Wallace Proctor, the President of the Alumni Association; the annual oration was delivered by Thomas D. McElhenie, of Brooklyn, of the class of '72, and the annual class oration by Walter Adam Smith, of this city. Edward J. Hadfield, of Dodge, Kan., read the history of the class of 1886 and 1887, and William C. Hepler, of Reading, the class prophet, foretold its future. The alumni gold medal for the senior receiving the highest general average was awarded to Olin U. Cassaday, of Alliance O.; the silver medal, or quizmaster's prize, to Ellsworth S. Beshore, of Bethel, Pa., and the testimonial certificate for the junior receiving the highest general average of the class to William Crutcher, of Nicholasville, Ky. The seven prize certificates to the members of the graduating class receiving the highest averages were given as follows: Materia medica, William A. Partee, of Nashville, Tenn.; pharmacy, Addison L. Beck, of Sharon, Pa.; chemistry, Charles A. Bondurant, of St. Louis; general pharmacy, Edgar Breneiser, of Reading; operative pharmacy, John G. Patton, of Youngstown, O.; analytical chemistry, Frank W. Droelle, of Detroit; specimens, Bennett L. Taylor, of Zanesville, O. For the best collection of indigenous plants, Paul Leuschner, of Detroit, was awarded the prize certificate. The programme was interspersed with college songs.

Illinois Pharmaceutical Assoc.—A special meeting of the Illinois Pharmaceutical Association was held at Springfield on January 13th and 14th, for the purpose of hearing the report of the legislative committee, who suggested the following amendments to the Pharmacy Law:

1. To pay the expenses of the State Board of Pharmacy, and thus do away with the annual renewal registration fee.
2. To abolish diploma distinctions, so that all persons asking registration in future will be compelled to demonstrate their ability as practical pharmacists.
3. To so amend the pharmacy law that none but registered pharmacists shall be allowed to sell *any kind* of drugs, medicines, or poisons.
4. To give registered assistants the privilege of registering as pharmacists.
5. To exempt pharmacists from jury duty.

In addition to the above, the following were offered by the meeting:

To provide for the issuing of a minor certificate, and separation of the office of Secretary and Treasurer of the Board of Pharmacy.

To empower the Board to elect their Secretary, either from or outside their membership, as in their judgment will be for the best interest of all concerned.

These suggestions were incorporated with the others, and the committee instructed to work for the passage of them together, with No. 2 of the original report, and drop the balance, if necessary, for the success of these three.

All sections of the State were represented, and judging from the meeting and letters received from different parts of the State, the amendments are going through without much opposition.

Fraternally, L. C. HOGAN, *Secretary.*

Connecticut Pharmaceutical Association.—The officers of the association for the current year are: *President*, C. W. WHITTELSEY; *Vice-Presidents*, J. O. MAY and J. H. PARKER; *Secretary*, FREDERICK WILCOX; *Treasurer*, L. H. GOODWIN.

The next meeting will be in Williamstown. 260 active members are enrolled and there are over $1,200 in the treasury.

Cincinnati Drug Clerks' Association.—The officers elected February 4th were: E. H. W. STUHLHUTT, President; E. NUTTIM, Vice-President: W. SIMONSON, Secretary; O. R. PLATTE, Treasurer.

The Kansas City College of Pharmacy has been organized as a department of the University of Kansas City. The faculty consists of J. Schweitzer, Ph.D., as Professor of Pharmacy; R. R. Hunter, as Professor of Chemistry; E. Lanphear, M.D., as Professor of Materia Medica; and F. A. Holton, Ph.G., as Professor of Botany. The first course of lectures was commenced on the 21st of February.

The Confectionery World, of London, England, the first number of which is just at hand, is a handsome 32-page quarto, which has its advertisement pages nicely filled with British "ads," and its reading matter with extracts from American sources. Such an admirable combination ought to succeed.

The Medical Herald, a new monthly journal to be published in Louisville, Ky., is to have a department devoted to pharmacy, edited by Mr. J. W. Fowler, a manufacturing and dispensing pharmacist of that city.

Alfred Bishop, a London (Eng.), pharmacist, who is largely known in this country through his granular effervescent preparations, died on New Year's eve, at the age of 65, from cerebral hemorrhage.

Note on Cubebs.

IN 1879, a craze originated in America for asthma cigarettes, of which cubebs formed an important ingredient, and which were recommended as a remedy for catarrhal affections. Prior to that period, the use of the drug had been chiefly confined to the treatment of gonorrhœa, though cubebs formed a principal ingredient in some proprietary lozenges. Asthma cigarettes soon became extremely fashionable in America, and a few speculators bought up every parcel of cubebs upon which they could lay hands on the European market, with the result of quickly forcing up the price of the drug 10*l.* or thereabouts. The enormous demand then prevailing for cubebs may be illustrated by the fact that in February, 1880, no less than 737 bags of cubebs arrived at New York in a single shipment.

Stimulated by the high prices prevailing, the production in Java had extended considerably, but by this time the American speculators had obtained a tight grip of the article, and manipulated at will, sometimes flooding the European market with large shipments in order to momentarily depress the values of the drug and secure at a low rate any parcels which second-hand holders might offer. At the same time all sorts of tricks were resorted to in order to keep alive the demand for the article in America; but the asthma-cigarette craze has by this time subsided. Notwithstanding this, the American speculators have continued their game, and as the article is a comparatively small one, they succeed without much difficulty in controlling the bulk of the supply; hence the continued dearness of the drug.

The consumption of the article cannot now be said to be on the increase; in fact, during the last few years, the imports in America have been falling off. At present our stock has been very much reduced, and at the commencement of the month amounted to only 41 bags in the first hand, while from 21*l.* to 23*l.* is quoted for stalky or good genuine berries. In Holland, the imports during 1886 amounted to about 200 bags, less than half of which belonged to the acknowledged genuine variety. The Dutch market is now said to be very bare, the stock at Amsterdam not exceeding 1,050 lbs., 600 lbs. of which are gray berries. If recent mail advices from America can be trusted, the stock at New York is also very low, being estimated at less than 7,000 lbs., or barely sufficent for one month's requirements. . . . A few years ago, a consignment of nineteen bags of spurious cubebs was stopped by the New York custom authorities and destroyed. It was then announced that all cubebs imported into the United States would be subjected to a close examination, but if the parcels which are frequently purchased in London for the alleged purpose of exportation to America are in reality shipped to that country, the vigilance of the American customs' officers must have greatly relaxed of late.—*Chem. and Drugg.*

Picrate of Ammonium as a Remedy in Malarial Fevers.

H. M. CLARK, M.D., of Amritsar, Northern India, writes to *The Lancet* that during a period of four and a half years he has treated in that unhealthy region over 10,000 cases of malarial disease with this remedy with excellent results. Of 5,000 cases of which records were kept, 9 cases only were not controlled by it, and quinine was resorted to successfully. It was usually given in doses of ¼ grain to 1½ grains, 4 or 5 times daily, in pill, ½ grain being a fair average dose. In the majority of cases ½ grain, given in the interval, prevented the recurrence of the paroxysm, while in about 20% of cases 2 or 3 attacks followed before the fever ceased. It does not appear to be of use in the remittent type, nor is enlargement of the spleen influenced by it. He summarizes its advantages over quinine as follows: 1. Its comparative cheapness. 2. The smaller dose. 3. Absence of headache, deafness, tinnitus aurium, and disorder of stomach.

Powdered olive stones are at present the favorite adulterant of pepper and difficult of detection.

How to Make Solutions of Corrosive Sublimate Keep.

In these days of antiseptic surgery, it is in many places necessary to keep on hand solutions of corrosive sublimate of varying strength. Very generally some concentrated stock-solution is kept on hand which is diluted according as the circumstances require. The most convenient of these stock-solutions are the following:

1. *Glycerole of Corrosive Sublimate*, 1 grain in 2 minims.

This may be made by adding say 16 troy oz. powdered bichloride of mercury to 24 fl. oz. of pure glycerin, contained in a porcelain capsule, and heating the whole on a water-bath, stirring constantly with a glass rod, until the bichloride is dissolved. It will, however, be noticed that there is always a more or less dense white precipitate at the bottom of the capsule, which consists mostly or entirely of mercurous chloride, due to the decomposition of a part of the bichloride into calomel and chlorine, the latter of which unites with hydrogen of the water present in the glycerin while oxygen escapes. This decomposition can be largely prevented by making the solution in the dark. But it is much better to add to the bichloride either chloride of ammonium or chloride of sodium, whereby double salts are formed which are just as antiseptic as the original bichloride, and which are but little liable to decomposition.

We therefore recommend the following method which we have used for years:

Bichloride of mercury	16 tr. oz.
Chloride of ammonium	2 tr. oz.
Glycerin	a suff. quant.

Add the bichloride of mercury in powder, andthe chloride of ammonium, to 14 fl. oz. of glycerin previously heated on a water-bath, and continue heating and stirring with a glass-rod until solution is effected. Allow the liquid to cool, then measure it and add enough glycerin to make it measure 32 fl. oz. Color it *pink* with *fuchsine*.

There is no necessity of employing an amount of the alkaline chlorides equivalent to what would be required to form a complete double salt. A fractional amount of this is sufficient. The small quantity of ammonio-mercuric chloride present is capable of keeping the remainder of the mercuric chloride in solution unchanged. Some, however, prefer to employ an amount of alkali chloride fully equivalent to the bichloride. The addition of a little fuchsine to the solution is quite important. Were the glycerole left uncolored, it would be possible to mistake it, some time or other, for plain glycerin. The dangerous nature of the solution is well indicated by the peculiar red tint of the fuchsine. On diluting the glycerole with water, the tint comes out more strongly. Fabrics saturated with it retain the pinkish tint, and this is likewise an advantage, as it enables them to be at once distinguished from plain fabrics.

2. *Alcoholic Solution of Corrosive Sublimate.*

Best made of the strength of 1 tr. oz. in 8. fl. oz. To hasten solution, this is best made with the aid of heat, the volume being made up when cold. In this case a decomposition is not to be feared. This ought also to be tinted with fuchsine.

Either of the preceding solutions is diluted, when required, to the desired strength.

Some time ago, E. Mylius also recommended, in the *Pharm. Centralh.*, the addition of chloride of ammonium to the aqueous solution of bichloride, to render it more stable. A correspondent of this journal subsequently objected to the addition, because he had found that when he diluted it with common, or *hard* water, a copious white precipitate of ammoniated mercury was produced. The editor of the journal found that this statement did not apply to solutions made with the ordinary drinking water of the city of Dresden. At all events, no great difference could be detected between the quantities of precipitate gradually formed on diluting the stock-solution with the water of the city service or with well water. But the editor thought the addition of alkali chlorides to be of doubtful propriety, as it was not known whether the double salts thereby produced possessed equal disinfecting powers with the sublimate itself.

In a reply to this, written by Mylius, the latter says, that the precipitate caused by *hard* water was nothing surprising. But the chloride of ammonium was not directly to blame for this. The fact is that *hard* water will cause a precipitate with corrosive sublimate even in absence of chloride of ammonium. There is a difference in the *character* of the precipitates, however: that produced in absence of chloride of ammonium is only oxychloride; in presence of this salt, however, the precipitate contains ammonium. He also suggests that, if chloride of ammonium is objected to on account of its possibly causing the formation of such precipitates, *chloride of sodium* could be used.

Indian Hemp, in doses night and morning of one-half grain, increased, if need be, to a grain, and continued for some time, is spoken of by Dr. Stephen MacKenzie (Lecturer on Medicine at the London Hospital) as the most valuable remedy he has met with in the treatment of persistent headache.—*Br. Med. Jour.*

Indian Hemp.

The variations observed in the strength of extract of Indian hemp is owing to the use of different kinds of the crude drug. That produced in Eastern Bengal is the best, and of it there are two kinds—the flat and the round ganjah, as stated by Mr. Holmes. These differ considerably in strength; moreover the round is taxed one-quarter more than the flat. The duty on the round is from 35*l.* to 40*l.* per maund, exclusive of the right to sell it, either by wholesale or retail. In connection with this taxation, there is a curious anomaly existing in India, viz., that the yearly returns in Bengal show a consumption amounting to 6,000 maunds, with a tax of 20,000*l.*, whereas in Bombay the consumption is 9,000 maunds with a taxation of only 10,000*l.* The law which imposed the tax was passed about ten years ago, and the difference referred to had been overlooked. These quantities do not represent the total produce of Indian hemp. 2,000 maunds are yearly exported from Bombay to Liverpool and London, duty free, the result being that it can be bought in London at one-twentieth the price at which it is sold in Bombay. The wonder is what becomes of it, and it is presumed that it is reshipped for consumption in India after escaping the customs. The wild variety known as *bhang* differs from the cultivated *ganjah*. It is much weaker, and is used for the preparation of an intoxicating liquor and sweetmeats. The liquor is called *hasheesh*, this word being the source of our word assassin, a corruption of the native word "*hasheesheen*," applied to the intoxicated and homicidal persons who drink the liquor. The sweetmeats are made by digesting the *bhang* in *ghee*, a kind of butter, the mixture being afterwards made into a suitable mass.

Ganjah is smoked, never eaten. The drug is placed in a pipe, ignited in a certain way, and two or three whiffs is all that is necessary to make a man delightfully drunk. *Bhang* is smoked in a different way. It is placed on a fire in the middle of a room, in which a number of persons sit, and as the fumes fill the apartment all in the room get drunk together.

The resinous exudation from the stem of the plant, known as *churras*, is collected in the following manner: A number of men are stripped of the little clothing which they wear, their bodies well oiled, and they are made to run through the hemp fields in all directions. As they press their way through the stems, their bodies become covered with the resin. They are then conveyed to headquarters and scraped. Another substance, termed *mummia*, is a much more nasty preparation. This is referred to in the last edition of Johnston's "Chemistry of Common Life." The preparation is made in Nepaul. A certain plant is administered to miserable wretches, and it produces upon them a loathsome eruption. It is this eruption which is scraped off their bodies, and used like *ghee* along with *bhang*.

It is essential for the production of ganjah that the fields should be kept free from male flowers, otherwise a single male flower present in a field will, by fertilization, convert it into *bhang*. In cultivated fields of the hemp, the male flowers are separated by native doctors, who are most proficient in their work. When the plant consists of only a short stem one and one-half feet high, these doctors, after striking a bargain, and singling out every male plant, cut it down and leave not a single one standing. Attempts have been made to get at the explanation of this wonderful skill, but even with the help of a microscope the author had failed to find any satisfactory point of distinction between the male and female plants at this point of growth. The flower heads are prepared for market as follows: A hollow space is made in the earth, and the freshly-pulled heads are placed in it, the work-people then roll it about with a shuffling motion of their bare feet, the amount of pressure which the heads are subjected to determining the form of the product and strength.

It may be remarked, incidentally, that not much is to be learnt by associating with the native doctors. We know all about the many hundreds of drugs of India, and there are not more than forty or fifty of them of any real use. Moreover, the natives keep the drugs in their shops until they are perfectly rotten and worm-eaten, and as we are dependent upon them for many of these drugs that fact accounts for numerous specimens in the Indian Court being in a bad condition.—Dr. Geo. Watt, Commissioner of the Indian Economic Court of the Colonial Exhibition, in *The Tropical Agriculturalist.*

Turpentine Liniment.—Michael Conroy says that the B. P. formula for this liniment results in a liquid with some manipulators, with others it is jelly-like. It consists of 2 oz. soft soap, 2 fl. oz. distilled water, 1 oz. camphor, and 16 fl. oz. oil of turpentine. The soap being mixed with the water and the camphor dissolved in the turpentine, the two fluids are rubbed together until thoroughly mixed. Experiments show that the quality of the soap and oil have little to do with the result and that a jelly-like product should follow the pharmacopœial process. When a liquid liniment is desired, the quantity of water should be doubled.—*Chem. and Drugg.*

PROF. REMINGTON says that the best vehicle for menthol for outward application is oleic acid, half an ounce of which will dissolve 200 grains of menthol in a test-tube with the aid of heat.

Ethereal Solution of Tannin, of syrupy consistence, is said to immediately soothe the pain of burns, and, as it dries rapidly, it forms a pliable, non-elastic coating which is preferable to collodion, as it does not shrink or become stiff.

Action of Pilocarpine on Milk Secretion.—Mr. Chéron has had successful results from the hypodermic use of nitrate of pilocarpine as a measure for re-establishing the secretion of milk. Five centigrammes are to be injected once daily, and should not (to be successful) cause diaphoresis. No bad result to nurse or infant has been observed.—*Br. and Col. Drug.*

Mullein Oil.—This oil is highly spoken of by American practitioners as a remedy for otorrhœa and deafness. It is prepared by digesting mullein flowers in oil contained in a well-closed bottle, and exposing it to the action of the sun for three or four weeks, then draining off the brown oil which is formed. A few drops of the oil placed in the ear relieves earache in less than fifteen minutes.—*Chem. and Drug.*

Artificial Honey.—Lyle & Fastig, of London, have obtained a patent for making artificial honey by adding to a mixture of equal parts of dextrose and levulose a solution of cane-sugar and a small quantity of butyric ether; heat the mixture until it becomes homogeneous, and obtain the granular consistency by the addition of some crystallized honey." It is to be hoped that the mixture will be sold for what it is.—*Chicago Grocer.*

Lanolin as an Excipient for Mercurial Ointment.—C. S. Hallberg found that 5 grains of mercury, triturated in a mortar with 1.5 grammes of purified wool fat, was completely extinguished in 10 minutes. 3.5 grammes of petrolatum, then added, gave a product containing 50 per cent of mercury so finely divided as to be invisible by a magnifying power considerably greater than required by the U. S. P.

Morphine and Sulphuric Acid.—It is often stated that morphine is soluble in cold concentrated sulphuric acid without color. Hesse points out (*Annalen* 234, 255) that this is not correct, but that the solution has a very faintly red tint. The U. S. Ph. is therefore nearly correct, as it recognizes the appearance of reddish tint after some time. But it was not considered as being an inherent property in morphine to produce this tint.

Preservation of Flowers.—In a well-corked bottle dissolve 6 drs. of coarsely cracked, clear gum copal mixed with an equal weight of broken glass, in 15½ oz. (by weight) of sulphuric ether. Soak the flowers in this for a few minutes, and on removing them slowly allow them to dry in the air for ten minutes. Repeat this four or five times. Thus treated, flowers will retain their brilliancy and freshness for a long time, if guarded from too much handling.—*Chronique Indust.*

Chloroform as a Hæmostatic.—Dr. Ipaak, of Brussels, has found a mixture of 2 parts of chloroform and 100 parts of water to be an excellent hæmostatic in bleeding of the gums after the extraction of teeth. Probably it would be serviceable in other cases where only smaller vessels are ruptured. Chloroform requires about 300 parts of water for solution; hence the above-named proportions of water and chloroform will not form a clear solution, but rather a mixture, which will have to be shaken up when it is required to be used.

Simple Burette Clamp.—A correspondent of the *Science News* suggests the following simple burette clamp: Take two spring clothes-pins and fasten them together, with their jaws in opposite directions. One pair of jaws secures the clamp to the stem of a retort stand, the other pair holds the burette or other articles. The jaws can be enlarged for the heavier burettes without enlarging the combination. It is also a convenient contrivance to hold a pipette which is repeatedly in use. The device also serves to hold a small funnel in filtering.

Constituents of Ergot.—A prize of 600 francs has been offered by the *Académie Royale de Médecine de Belgique* for the best reply to the following query:

Determine the chemical composition of ergot by new experiments.

Replies, which must be written either in Latin, or French, or Dutch, must be sent in by February 1st, 1888. (We can give more details to any one among our readers who should desire to compete.)

An Adulteration of Saffron is reported from abroad consisting in coloring the exhausted stigmas with aniline. The fraud may be easily detected by the tint given to the watery infusion which lacks the characteristic saffron-yellow hue, as well as by the absence of the odor.

Compositions for Laboratory Floors.—1. Mix together boiled linseed oil and finely powdered coal, to produce a substance of the consistency of paint. Apply a coat of this to the floor. 2. In a metal pot make a mixture of 40 parts of chalk, 50 of resin, 4 of linseed oil and 1 of native cuprous oxide. Then stir in, carefully, 1 part of sulphuric acid. A sort of mastic results, which may be applied hot, and, when dry, forms a varnish of stony hardness.

Non-Existence of Hæmidin.—Some time ago, E. Dannenberg announced the discovery of a new crystalline constituent of blood, which, according to him, could be easily obtained in recognizable crystals even when all other methods of recognizing blood failed. In the "extraction" of this substance, which he called *hæmidin*, Dannenberg employed sulphide of ammonium. It has now been shown by Dr. Karl Amthor that these crystals can be obtained from the reagents employed by Dannenberg even when blood is absent. In fact, the crystals turned out to be nothing more or less than *sulphur.*

Elimination of Fluorine by means of Electricity.—H. Moissau, of Paris, submitted anhydrous hydrofluoric acid to electrolysis by 50 Bunsen elements in a U platinum tube at 50° C. Hydrogen resulted at the negative pole. At the positive p. a continuous current of gas was given off which was completely absorbable by mercury, producing yellow protofluoride. Water was decomposed into ozone. Phosphate burned rapidly in it, producing fluorides. Sulphur heats and fuses. Carbon is unaffected. With potassium chloride it produces cold and liberates chlorine. Crystallized silicon washed with nitric and hydrofluoric acids takes fire by contacts with the gas and produces silicon fluoride. The iridized platinum positive pole becomes heated to redness.—*Comptes Rendus.*

Cutting Glass Bottles.—The editor of the *Western Druggist* remarks that in cutting bottoms off bottles which are to be used as percolators, etc., a cotton or woollen thread of medium thickness is saturated with alcohol and wrapped loosely around the bottle at the place of desired fracture, a file mark having first been made. The bottle being held horizontally the thread is ignited, and after combustion has ceased and while the glass under the cord is still hot the bottle is immersed in cold water. The resulting fracture will follow the line of the file mark. The edge may be ground on a plane of glass with sand, camphor, and turpentine.

The Quality of Quinine formerly and now.—In a paper on the quality of quinine originally manufactured by the discoverers of this alkaloid, communicated to the Pharmaceutical Society by Dr. de Vrij (according to the *Chem. and Drug.*), the author makes some interesting statements which help to explain the comparative purity of the commercial quinine manufactured years ago, and the increased percentage of other alkaloids occurring at the present day. He says:

"Since the discovery of quinine in 1820, chemistry and its application to chemical industry have made immense progress, and we should consequently have the right to expect that the quality of the actual quinine sulphate was at least as good as in the time of the discovery of quinine. Thanks to the kindness of M. Genevoix, director of the Pharmacie Centrale de France, I was put last May in possession of a specimen of Calisaya bark from the collection of Pelletier himself, from which I obtained 6.4 per cent of quinine tartrate. The optical observation proved that it contained 95.4 per cent of quinine tartrate and 4.5 per cent of cinchonidine tartrate, which alkaloid was unknown in Pelletier's time. Therefore the quinine sulphate manufactured from such barks *could not have contained more than 3.26 per cent of cinchonidine sulphate.*

"Consequently, instead of making progress, we have retrograded, for the actual commercial quinine sulphate contains generally more cinchonidine than that manufactured by Pelletier.

"The cause of this fact is that calisaya bark (*Quinquina Jaune*) was originally exclusively used for the manufacture of quinine sulphate till about 1849, as the first barks from New Grenada were introduced into Europe in 1848 by Auguste Delondre, one of the partners of the firm, Pelletier, Delondre et Levaillant. Many of these barks contained, besides quinine, appreciable quantities of cinchonidine, the consequence of which was that the quinine sulphate manufactured from these barks contained more cinchonidine than that formerly prepared from calisaya bark. This amount of cinchonidine in French quinine sulphate was the cause that my lamented friend, Dr. C. Zimmer, the well-known quinine manufacturer, issued in 1861 a circular to his customers to warn them against this quinine sulphate, which he supposed to have been mixed with cinchonidine sulphate. This, however, was not so, for the presence of such a large quantity of cinchonidine was only the consequence of the use of barks containing much cinchonidine besides quinine. Zimmer's circular contains the following sentence:

"'We know still little about the therapeutic action of this alkaloid (viz., cinchonidine) but whatever results the impending experiments may afford, such voluntary substitution is under all circumstances indefensible, and makes honest competition almost impossible.'"

Etching Ink for Glass.

EUGEN DIETERICH gives the following directions:

Mix intimately, in a porcelain mortar, 10 parts each of fluoride of ammonium and of sulphate of barium, place the mixture into a platinum or lead-vessel [a piece of sheet-lead turned up at the edges will answer well] and make a paste by stirring in 9.3 parts of fuming hydrofluoric acid [the stirring may be done with platinum or with a thin strip of sheet-lead]. Dip a steel pen into the paste and write with it upon the glass. After about half minute wash off with water.—*Pharm. Zeit.*

Improvement in the Test for Glucose.—When grape-sugar is tested for by Fehling's solution, it happens not unfrequently that the separated cuprous oxide remains suspended in the liquid for a long time. A rapid precipitation may be brought about by adopting the recommendation of S. Munke, namely, to add to the liquid 3 to 5 drops of a 15-per-cent solution of chloride of calcium.—*Centralb. f. d. Med. Wissensch.*

Sugar in Cement.—A correspondent of the *Madras Mail*, on the basis of a number of trials of a mixture of sugar with lime and white of egg, as a cement for porcelain and marble, suggests the use of simple syrup with plaster-of-Paris instead of water, in the use of plaster as a cement.

Guarana: Method for its Assay and the Assay of its Fluid Extract.—(H. W. Snow.) The disadvantage of the two days' time consumed in the mode of assay recommended by Feemster and Green, based upon E. S. Wayne's method of extracting caffeine (*Amer. Jour. Pharm.*, 1877, p. 337), leads the author to recommend the method for assaying nux vomica by A. B. Lyons, (*Drug. Cir.*, 1886, p. 137). 5 Gm. of drug, in a 100 to 140 C.c. flask, is shaken, after closure, with 44 C.c. of chloroform, and then are added 6 C.c. of a mixture of 6 volumes of alcohol and 1 vol. stronger water of ammonia; again shaken and allowed to stand, with occasional shaking, during several hours, or at rest over night. Filter rapidly through a 4-inch filter paper, using a vessel graduated to 44 C.c. as a receiver. When the mark is reached, evaporate the chloroform and treat residue with a little water, and filter first through cotton and then through paper, the wash water from cotton filter being used for washing the paper. Continue washing until no precipitate forms with phosphomolybdic acid. This aqueous liquid is washed in a separator, with successive portions of chloroform (twice, usually), until phosphomolybdic acid gives no deposit. Evaporate chloroform from a weighed beaker and dry the residue at 106° C. for half an hour. The weight in grammes, multiplied by 25, gives per cent of alkaloid.—*Western Druggist.*

Another method, more economical of time and chloroform: To 15 C.c. of fluid extract are added 30 C.c. of distilled water, in a small flask, and shaken with 2 Gms. of slaked lime. Filter through 4-inch paper (dry). 15 C.c. is neutralized with dilute sulphuric acid (avoiding excess). Evaporate to dryness; digest residue with a little water, filter, wash until no precipitate is given by phosphomolybdic acid. Render alkaline with ammonia, wash thrice with chloroform, evaporate—and so on as in former process.

Huamanripa is a Chilian expectorant derived from a plant belonging to the genus *Cryptochæthos*, and found only on the mountain slopes. It flourishes during the rainy season, and then disappears with the exception of the root. It is aromatic and resinous. Drying causes a loss of the greater part of its essential oil, which may be collected by distillation with water. After the essential oil has been extracted, the resin possesses a special aroma. Infusions of 25 parts by weight in 1,000 of water are bitter and apt to produce nausea in larger doses unless brandy is added. In small doses it stimulates the heart and increases secretions, especially the salivary. Large doses cause vomiting, perspiration, depress the heart's action, respiration, and temperature.—*Rép. de Pharm.*

Bulletin of Miscellaneous Information is the title of an occasional publication by Mr. W. T. Thistleton Dyer, the Director of the Royal Gardens at Kew, England. It is intended for such notes on economic products and plants as come to the attention of the Staff of the Royal Gardens, and are too voluminous for insertion in the annual report. Eyre and Spottiswoode, of London, are the publishers.

Pain in the Stomach after taking food, especially in cases of cancer, is stated to be relieved by a dose of the following mixture: Tinct. conii, tinct. hyoscyami, ol. anisi, of each ℥ij.; tinct. gentianæ, ad ℥i.; dose, ten to thirty drops after meals.—*Chem. and Drug.*

Kola Nuts.—According to an analysis of kola nuts made by the consulting analyst of the Royal Commissioners for Victoria, Fiji, Mauritius, etc., kola nuts (from *Sterculia acuminata*) contain, among other constituents, caffeine, 2.710; theobromine, 0.084; bitter principle, 0.018; oil and fat, 0.815; resins, 1.012; starch, 28.990; ash, 9.722; and other usual constituents.

QUERIES & ANSWERS.

Queries for which answers are desired, must be received by the 5th of the month, and must in every case be accompanied by the name and address of the writer, for the information of the editor, but not for publication.

No. 1,898.—**Channing's Solution of Iodohydrargyrate of Potassium** (H. D.).

The formula for this solution is to be found in Dick's formulas under the title of "Channing's Mixture," where it is stated to consist of three and one-half grains of iodide of potassium, four and one-half grains of biniodide of mercury, in one ounce of distilled water.

No. 1,899.—**Phosphorescent Show-Cards, etc.**

The following inquiry by one of our subscribers, which we cannot at this moment answer, may elicit the desired information from some of our readers:

"Can you tell me where I can buy something to put on the outside or inside of my glass door, telling the public to 'press the button,' something in the order of a *face* with the above inscription, or embossed *faces* of a *phosphorescent* character? I have seen them advertised, but do not remember where."

No. 1,900.—**Poultry Food** (Altoona, Pa.).

"Please to publish the formula for 'Rittenhouse Poultry Powder' (not now in the market), or of some other good and reliable poultry food, something for the general health of poultry and a preventive of cholera and croup."

We do not have the formula of the poultry powder above mentioned at hand. Perhaps some of our readers can supply it.

No. 1,901.—**Lactocrite** (Subscriber).

In reply to our correspondent who desires to know what lactocrite is, and what the method of application to "lacto-*i.e.*, milk" may be, we would refer him, among other sources of information, to *The Analyst* (London), Jan. 1887. We may briefly state that the lactocrite is an instrument by means of which a definite quantity of milk, inclosed in a horizontal, flat, disc-shaped vessel, may be put in very rapid rotary motion, in consequence of which the butter-fat is made to unite in a mass which separates from the liquid by the rapid centrifugal motion (about 6,000 revolutions a minute). As the presence of solid casein in the whey would interfere with the separation of pure butter-fat by this operation, it is necessary to get the casein in solution, which is done by first boiling the milk with an excess of acetic acid.

No. 1,902.—**Carbon Paper** (E. J. A.).

The formula printed in our January number, on the advertisement pages, is probably as good as any other. In order to put it in a more permanent place, we reprint it here.

Take of clear lard 5 oz., beeswax 1 oz., Canada balsam $\frac{1}{16}$ oz., lampblack q.s. Melt by aid of heat and mix. Apply with a flannel dauber, removing as much as possible with clean woolen rags.

In addition, we would say that the preparation ought to be applied only to *one* side of fine or thin writing paper. Also, the other published formulæ omit the wax and Canada balsam. Some direct lard and others pure, fresh tallow. We think that a good result can be obtained also by using vaseline or some other petroleum ointment for a base; but we have not tried this. When applying the mass, it should be thoroughly rubbed in, and all excess carefully rubbed off.

There is no patent on this article, so far as we are aware.

No. 1,903.—**Soft Rubber Cones** (P.).

"I wish to make one or more soft rubber cones of say two inches in length with a small hole through endwise. Can you inform me, through your valuable journal, how to proceed to make the mould and to melt the rubber?"

We fear that any explanation we might give in these columns regarding the manipulations and processes involved in obtaining the desired object would be insufficient to insure success. The fact is, that articles of the kind desired cannot well be made on the small scale. It is much more easy to make *hard* vulcanized rubber articles singly, than soft ones. Any good dentist can give you some practical hints regarding the general outlines of the process. We would advise you to have those rubber cones made at regular rubber works, which would insure their proper quality and correct shape better than could be expected were you to try the experiment yourself. If you wish to post yourself as to the methods of manufacture, we cannot do better than to refer you to the useful practical work of Raimund Hoffer, "Kautschuk und Guttapercha" (8vo. Wien, Hartleben; price, about $1.50) which you may obtain through any importing German bookdealer.

No. 1,904.—**Leather Cement** (J. D. C.).

This correspondent wants a formula for leather cement which will form a clear solution. He states that he used carbonate of lead for clarifying it, but he finds this to require a long time, and even then it does not produce a clear solution. This leads us to surmise that he dissolved gutta-percha in chloroform or bisulphide of carbon, and followed the process of the U. S. Ph. in clarifying it. If we are correct in our surmise, we would suggest that he employ a considerable excess of the solvent, part of which may be advantageously replaced by benzin. A dilute solution is quite easily filtered. The excess of the solvent may then be recovered by distillation. Of course, proper precautions must be taken to guard against loss by evaporation during filtration. If our correspondent will send us more exact details regarding the nature of the materials he experimented with, we may perhaps be able to give more information.

No. 1,905.—**Barium Manganate** (G. H. H.).

Barium manganate may be prepared in various ways. On the large scale it is best prepared by heating the black oxide of manganese with an excess of barium hydrate and some barium nitrate in an open hearth, with access of air, until the mass is melted. The reaction takes place between three molecules of binoxide of manganese (MnO_2) and one molecule of barium hydrate ($BaHO_2$). Allowance must be made for the impurities in the crude binoxide of manganese. Another method is to heat a solution of manganate of potassium (*not* permanganate) to boiling and precipitating it with a hot solution of chloride of barium.

You will find methods of preparing the salt in *Journ. de Pharm.* [3], vol. 46, 344; *Bull. de la Soc. Chim.* [2], vol. 5, 477; *Chemisches Centralbl.* 1873, 737, *ibid.*, 1875, 568; and elsewhere. All of these works may be consulted by you, if you apply at the Boston Public Library or the libraries of Harvard University.

Regarding the application of this salt (by Kastner) to the bleaching of glue, we have no information available. But you will probably find references to it by consulting the current literature on technology. Look over the index of the several annual issues.

No. 1,906.—**The Bichromate Test of Olive Oil** (Analyst").

Our correspondent desires us to inform him what may be the "bichromate" test for olive oil. We only know of one, that of A. Andoynaud, which has been published in 1885 (in *Comptes Rend.*, 101, 732). It is as follows:

Into a graduated test-tube, 15 Cm. (6 inch.) in length, and 1.5 Cm. ($\frac{5}{8}$ inch.) diameter, pour 2 C.c. of the olive oil to be examined, add 0.1 Gm. of powdered bichromate of potassium, shake a few minutes, and then add enough nitrosulphuric acid [a mixture of nitric and sulphuric acid] so as to make 4 C.c. in volume. Shake again, whereupon the liquid will assume a brownish-red color. After allowing it to be at rest for one or two minutes, add enough common ether (sp. gr. 0.724) to make the volume up to 5 C.c. After again shaking, the liquid will separate into two layers; shortly afterwards it will effervesce quite energetically, and nitrous fumes will be given off. When the reaction is terminated, the olive oil will swim on top, and will have a green tint, if the oil was pure. If, however, the color is greenish-yellow, yellow, or even reddish-yellow, the oil contains more or less of a foreign oil mixed with it. These tints may be better recognized by adding water up to 10 C.c.

No. 1,907.—**Elixir of Phosphate of Iron, Quinine, and Strychnine.**

The formula of the New York and Brooklyn Formulary, which has been recommended to be introduced into the National Formulary, has given general satisfaction, though there are experiments at present being made which will probably simplify the formula considerably. The following is the formula:

Phosphate of Iron (U. S. 1880)	256 grs.
Hydrochlorate of Quinine	128 "
Sulphate of Strychnine	1¼ "
Aromatic Spirit (N. Y. & B. F.)	6 fl. oz.
Water	4 "
Syrup	6 "
Aromatic Elixir (= Elixir Simplex, N. Y. & B. F.) enough to make	16 "

Dissolve the sulphate of strychnine and the hydrochlorate of quinine in the aromatic spirit, contained in a flask, by the aid of a gentle heat (by placing the flask in hot water and shaking). Dissolve the phosphate of iron in 4 fl. oz. of hot water, in a capsule, add the syrup and heat nearly to the boiling point. Then pour into this hot mixture all at once the hot solution of the alkaloids, and shake well immediately. When cold, add enough aromatic elixir to make 16 fl. oz., allow to stand for 24 hours and filter.

For filtering this elixir, use a plaited Prat-Dumas filter, placing between it and the funnel a thin layer of clean, loosely-picked tow, or use a filter frame such as is to be had in the market, for the purpose of keeping the filtering surface from being glued upon the glass of the funnel.

No. 1,008.—**Essence of Jamaica Ginger** (D. W. B.).

We can recommend the formula given by Mr. L. T. Stevens, in a paper read at the last meeting of the Am. Pharm. Association. It is as follows:

Fluid Extract of Ginger	16 fl. oz.
Powd. Pumice Stone	4 av. oz.
Water	32 fl. oz.

Pour the fluid extract into a bottle and add to it the pumice stone. Shake well occasionally during several hours. Then slowly add the water in portions of about 4 fl. oz., shaking briskly and often, and allowing to subside in the intervals. Continue this during 24 hours, filter, and pass enough water through the filter to make three pints, or until the three parts of partly alcoholic liquid originally mixed are passed through without allowing much water to pass. If the filtrate is not quite clear, shake it again with a little pumice stone or clean talc and filter again.

It is highly probable that some of the popular essences of ginger of the market contain something besides the ginger to improve and fortify their taste. What this substance is—possibly there is more than one—we have not learned, nor had we time to make experiments regarding it. On theoretical grounds it seems probable that quillaia may play a rôle in the compound. We would suggest that you try a very small proportion of a very weak tincture of soap-bark. Possibly this may help to take up more of the flavoring principle than would be the case otherwise. However, if it at the same time dissolves too much of the pungent resin, it will probably be objectionable.

No. 1,909.—**Detection of Mercury in Urine** (Supplement to answer to Query 1,874).

From a paper by A. Wolff and J. Nega in the *Deutsch. Med. Wochensch.*, 1886, No. 1,506 (also *Zeitsch. f. Anal. Chem.*, 1887, 116), the following process, being an improvement upon that of E. Ludwig and P. Fürbringer, appears to yield the best results.

Heat the urine after addition of chlorate of potassium (about 5 Gm. per liter) and hydrochloric acid upon the water-bath until it is colorless, then for two or three hours longer until the chlorine is dissipated and the urine is contracted to one-half or one-third its volume. Next, hydrosulphuric acid is passed through the urine for two or three hours, and the latter then set aside for twenty-four hours. The precipitate is filtered off, and the filter with precipitate treated with aqua regia. This solution is evaporated to a doughy mass, and then mixed with water to measure about 300 C.c. Into this solution are placed three or four strips of thin sheet-copper (5 *mm.* broad and 8–15 *cm.* long), previously ignited in hydrogen, the liquid then heated to 176° F. and kept so for some time. The strips of copper are then washed with solution of potassa and absolute alcohol, and rubbed with blotting paper until the latter cease to become soiled. They are then dried at about 173° F., folded up and introduced into glass-tubes. drawn out to a capillary at one end, while the other is fused up. On heating the wider portion containing the foil, the mercury is driven over into the capillary where it condenses. (This portion of the process is like that published in previous reply to query 1,874). On conducting the vapor of iodine over it, the characteristic red mercuric iodide will make its appearance.

No. 1,910.—**Solution of Bromide of Arsenic** (Ontario).

This correspondent says:

"Some time ago I ordered some bromide of arsenic, intending to get what I had previously had, viz., a *solution of bromide of arsenic*, a preparation that is highly recommended in medical journals for diabetes. Instead of receiving the solution, I got the salt in small fine crystals. Can you through your columns inform me what is the solvent used and what is the strength of the above solution."

The preparation you wanted is known as Clemens' solution of bromide of arsenic. We have published the formula several times. It is as follows:

Arsenious Acid, powd.	73 grs.
Carbonate of Potassium	73 "
Bromine	146 "
Water, enough to make	16 fl. oz.

Boil the arsenious acid with the carbonate of potassium and 10 fl. oz. of water until dissolved. When cold, add enough water to make up the volume to 14 fl. oz. Then add the bromine, and make up with water to 16 fl. oz. Agitate several times daily during a week; then set it aside until colorless, which will require several weeks, when it will be ready for use. Keep in a cool, dark place.

You cannot obtain the same product by dissolving bromide of arsenic (usually $AsBr_3$) in water or any other solvent. Water decomposes the salt, producing arsenious and hydrobromic acids. But these are not in the same proportions as in the mixture described above.

Experiments have been made by some of our medical friends, to ascertain whether a preparation obtained in this manner from the bromide of arsenic will not answer equally well as Clemens' original solution. The results, however, were not very satisfactory. Indeed, it is not by any means settled, whether Clemens' original solution is really such an efficient remedy in diabetes as it has been asserted to be.

No. 1,911.—Cement to mend Glass, China, etc.

We take the following from our files:

1. Add ½ pint of vinegar to ½ pint of skimmed milk. When the curd has separated, pour off the liquid and wash the curd with water until it is free from acid. Next add to it the white of five eggs, and beat it thoroughly to make a perfectly smooth mass. In this condition it may be kept for any time unaltered, if ether is poured upon it in a vessel or bottle which can be tightly stoppered. When a portion is wanted for use, it is taken out, the ether allowed to evaporate, the mass mixed quickly with finely powdered quicklime to make a paste, and this is applied quickly to the moistened and warm edges of the broken articles, which must be firmly pressed together so as to squeeze out the excess of the cement, and kept pressed together until dry.

2. Take casein, free from fat, and washed until no longer acid. Fill a bottle with it up to one-fourth of its height with the still damp casein. Then completely fill the bottle with silicate of soda solution, and shake frequently until the casein is dissolved. This cement is said to be very strong.

3. Soak one ounce of best carpenter's glue, broken in small pieces, in cold water until it is soft; then pour off the excess of water, melt the glue by heat and add to it 4 fluid ounces of acetic acid. When thoroughly mixed, transfer to small vials. It needs only a little warming to be ready for use. Some recommend the addition of a small proportion of alum (about 15 grains for every troy ounce of glue).

4. Knafel's Liquid Glue is prepared by soaking 60 parts of carpenter's glue in 100 parts of water for several hours, then adding 30 parts of pure 25% hydrochloric acid, and 15 parts of sulphate of zinc, and digesting the whole on a water bath for 12 hours.

We cannot publish the formulas of the commercial liquid glues or cements which you inquire about, as we are not in possession of the secret, nor would we be likely to obtain the permission of the owners.

No. 1,912.—Unofficinal Fluid Extracts (S. K.).

"Can you tell me where I can find formulas for making Fluid Extract of Cascara Sagrada, Compound Fl. Ext. of Cinchona, and other non-officinal fluid extracts?"

There is no work which is likely to give you working formulas for every conceivable fluid extract. By consulting the various formularies that have been published from time to time you will obtain formulas for one or the other. It should, however, not be forgotten that many of these formulæ are based on the sole authority of the author of the formulary, and not a few have been worked out at the desk with pen and ink, instead of in the laboratory by practical experiment. It is not difficult for an observing and moderately skilled pharmacist to devise a formula for any kind of fluid extract that is capable of being prepared. The whole difficulty lies in the choice of the proper menstruum. By consulting the statements of authorities (for instance, of the dispensatories) regarding the important constituents of the several vegetable drugs, it will be possible to select a menstruum capable of dissolving these out, and keeping them in solution. The more resinous a drug is, or the more volatile oil it contains, the more alcohol will be required in the menstruum. If the mucilaginous, or water-soluble portions are the more active constituents, less alcohol will be required. In many cases the addition of a small proportion of glycerin will prevent subsequent precipitation. Regarding the two fluid extracts mentioned in the query, we will append brief directions:

1. *Rhamnus Purshiana* (so called *cascara sagrada*). This is very resinous, the resin being of some importance. Hence the menstruum requires to be rather alcoholic. It may be prepared by mixing 10 measures of alcohol with 6 of water; or the menstruum recommended by Vogeler may be used (Proc. A. P. A., vol. 82), viz., alcohol 8 fl. oz., water 5 fl. oz., glycerin 3 fl. oz. Of course, the mode of preparation is the same as that of the officinal fluid extracts.

2. *Compound Fluid Extract of Cinchona.*—Regarding this you will find some data by Dr. E. R. Squibb in a paper contained in the *Proc. Am. Pharm. Assoc.*, vol. 26, p. 753, in which it is stated that the ingredients should be reduced to the fineness of a No. 40 powder, that the best menstruum is a mixture of 3 parts, by weight, of alcohol, and 1 part, by weight, of glycerin. From this may be reduced the following working formula, using for the time being, the troy-ounce and fluid-ounce as units:

Red Cinchona	160 tr. oz.
Bitter Orange Peel	128 "
Serpentaria	32 "

Reduce to a No. 40 powder, moisten with a mixture of glycerin and alcohol as before described, and proceed in the usual manner.

Dr. Squibb makes a compound fluid extract of cinchona, from *yellow* bark and the officinal aromatic powder. Compare *Am. Journ. Pharm.*, 1867, 523.

Much information regarding both officinal and unofficinal fluid extracts may also be obtained by consulting the volumes of *Proceedings of the Am. Pharm. Assoc.* See especially the collective Index in vols. 19, and the very excellent one in vol. 32. The latter will be found particularly useful.

Formulæ Asked For.

1. *Warner's Safe Kidney Cure.*—We have received the following communication from one of our friends:

"While not claiming that the following *is* the genuine article, yet it would puzzle any one to tell the difference:

Liverwort	1 ℥
Nitrate Potassium	320 gr.
Water	q.s.
Alcohol	2 fl. oz.
Glycerin	1½ fl. oz.
Ess. Gaultheria	♏ 40

Infuse the liverwort with 1 pint of boiling water. Strain and dissolve in it the nitrate of potassium. When cold, add the alcohol, glycerin, and essence of gaultheria, color, and make up the volume with water, if necessary, to 1 pint."

Under "essence" of gaultheria a solution of the essential oil in alcohol is evidently meant and not the pure oil itself.

2. *Kaskine.*—It had been conclusively shown, shortly after this nostrum came out—which is announced as being made from "pure bitumen"—that it consisted of nothing else than ordinary sugar in granules. Since the exposure, however, the manufacturers appear to have profited by the lesson they received, and now they mix with it a minute quantity of something else. According to Prof. F. B. Power and Dr. B. F. Davenport (as reported in the *Pharm. Rundschau*) this is at present *quinine*, about 1 part by weight in 1,000 parts of the finished preparation. A well-known chemist of this city has recently supplied the company with a testimonial, in which he certifies to finding four different remedial agents in the article. Comments are superfluous.

3. *Ayer's Ague Cure.*—This is said to be a syrupy tincture of cinchona with aromatics. Each bottle holds 6 fl. oz., and each fluid ounce was found to contain 3.2 grs. of amorphous cinchona alkaloids, 3 grs. cinchonine, 0.9 cinchonidine, 0.8 quinine, and 1 gr. of quinidine.

4. *Blair's Rheumatic Pills.*—We do not know the formula.

5. *Ham's Oil of Gladness.*—We have received the following from one of our subscribers:

"Some one inquired in your last December number for the formula of "Ham's Oil of Gladness." Following is an "oil of gladness," but whether it is Ham's, Shem's, or Japheth's, I cannot say:

Oil of Cedar,	
" Hemlock,	
" Sassafras	āā ʒ 2
" Thyme	ʒ 1
Camphor, powd	ʒ 1
Linseed oil	♁ 2

Dissolve the oils and the camphor in a sufficient quantity of alcohol, and add the solution to the linseed-oil. The dose is 8 to 10 drops for a child."

6. A formula for *Printer's Blocking Cement.*—One that furnishes a product ready for use and not requiring heat.

7. A formula for *Emplastrum Diachylon c. G.*, which our correspondent says stands for *Emplastrum Diachylon cum Gummi.* We surmise that this is meant for a spread diachylon plaster with a rubber base.

Retirement of Dr. Kerner.

Dr. George Kerner, the technical manager of Zimmer's Quinine Works at Frankfurt-on-the-Main, whose portrait will be found on page 141 of our volume for 1884, has retired from business, and his place has been filled by Dr. A. Weller, who has during several years been qualifying himself for the responsible position, under Dr. Kerner's direction. Mr. W. L. Jaeger has been made partner of Mr. G. C. Zimmer. The firm name will continue to be "C. Zimmer, Chemische Fabrik."

Dr. J. Pereira Reis, formerly Professor of Pharmacology in the Oporto Medical School, editor of Albano's "Codigo Pharmaceutico Lusitano," and author of numerous works, is dead.—*Illust. Sci. Monthly.*

Colorless Preparation of Golden Seal.—J. L. Irwin states experiments to prove that colorless preparations of *Hydrastis Canadensis* cannot contain berberine, and that the value of such preparations must depend mainly upon the hydrastine contained.

To keep postage stamps in the pocket or memorandum book without sticking, a New Orleans post-office clerk advises people to rub the sticky side over the hair two or three times. The oil of the hair coats the mucilage and prevents it from sticking.

Permanganate of Cocaine is lately announced.

SELECTIONS FROM THE HOSPITAL FORMULARY

OF THE DEPARTMENT OF PUBLIC CHARITIES AND CORRECTION OF THE CITY OF NEW YORK.

(Continued from page 60.)

VIII. POWDERS.

285. *Calomel et Naphthalinum* (*Bureau O. D. P.*).

℞ Hydrarg. Chloridi Mitis,
Naphthalini Deodorati...āā gr. 30

Mix. For external use. (*Dr. S. Alexander.*)

286. *Pulvis Acidi Borici et Iodoformi* (*Bureau O. D. P.*).

℞ Acidi Borici.....gr. 180
Acidi Tannici.....gr. 10
Iodoformi.....gr. 60

Mix. To be applied, once a day, to everted and granulated eyelids. (*Dr. W. F. Mittendorf.*)

287. *Pulvis Bismuthi Alkalinus* (*Pulvis "Trousseau," Trousseau's Powder*) (*Bureau O. D. P.*).

℞ Bismuthi Subnitratis,
Sodii Bicarbonatis,
Cretæ Præparatæ.....āā gr. 5

Mix. One dose.

288. *Pulvis Bismuthi Compositus* (*Bureau O. D. P.*).

℞ Bismuthi Subnitratis,
Sodii Bicarbonatis,
Sacchari pulv.,
Acaciæ pulv.,
Zingiberis pulv.....āā part. æqu.

Mix.

Dose: A tablespoonful, for adults, in dyspepsia. (*Dr. W. E. Wheelock.*)

289. *Pulvis Bismuthi, Cretæ et Opii* (*Bureau O. D. P.*).

℞ Bismuthi Subnitratis,
Cretæ Præcipitatæ.....āā gr. 30
Opii pulv.....gr. 1

Mix. Divide into 10 powders. For children, in diarrhœa. (*Dr. J. Lewis Smith.*)

290. *Pulvis Bismuthi, Cretæ et Zingiberis* (*Bell. Hosp.*).

℞ Bismuthi Subnitratis,
Cretæ Præparatæ.....āā gr. 5
Zingiberis pulv.....gr. 2

Mix. One dose.

291. *Pulvis Bismuthi et Pepsini* (*Bureau O. D. P.*).

℞ Bismuthi Subnitratis,
Pepsini Saccharati.....āā gr. 5

Mix. One dose, for children.

292. *Pulvis Cerii et Bismuthi Compositus.*

℞ Cerii Oxalatis.....gr. 3
Bismuthi Subnitratis,
Sodii Bicarbonatis.....āā gr. 5
Codeinæ.....gr. ½

Mix. Divide into 12 powders.

293. *Pulvis Iodoformi Compositus* (*Char. Hosp.*).

℞ Iodoformi.....part. 1
Zinci Carbonatis.....part. 3

Mix. To be applied with a blower, or by means of a dusting box, as a dressing in venereal sores, ulcers, etc.

294. *Pulvis Iodoformi et Naphthalini.*

℞ Iodoformi.....ʒ 2
Acidi Borici.....ʒ 3
Naphthalini.....ʒ 5
Olei Bergamii.....fl. ʒ 2

Triturate the naphthalin with the oil of bergamot, then mix with it the odoform and boric acid, and triturate until a homogeneous powder is produced.

Note.—The two preceding formulæ furnish a *diluted* iodoform powder, which may be used to advantage in most cases, in place of undiluted iodoform. The last-mentioned combination has the additional advantage of having the odor of iodoform completely disguised.

295. *Pulvis Iodoformi et Tannini* (*Pulvis Iodoformi Inodorum*) (*Bureau O. D. P.*).

℞ Iodoformi.....gr. 180
Acidi Tannici.....gr. 60

Mix. To be applied to ear, mornings and evenings, in granulations of external auditory canal. (*Dr. W. F. Mittendorf.*)

296. *Pulvis Morphinæ, Bismuthi et Pepsini* ("*Ward Powder*") (*Bell. Hosp.*).

℞ Pulv. Morphinæ Comp.....gr. 30
Bismuthi Subnitratis,
Pepsini.....āā ʒ 2

Mix. Divide into 12 powders.

297. *Pulvis Naphthalini Aromatisatus.*

℞ Naphthalini.....ʒ 4
Olei Bergamii.....fl. ʒ 1

Mix by trituration. For external use.

298. *Pulvis Quininæ Compositus* (*Clark's Powder*).

℞ Quininæ Sulphatis.....gr. 10
Capsici Pulv.....gr. 3
Opii Pulv.....gr. 1

Mix. One dose. (*Dr. Alonzo Clark.*)

299. *Pulvis Tannini Compositus* (*Conway's Special*) (*Bell. Hosp.*).

℞ Lycopodii,
Zinci Oxidi.....āā part. 1
Acidi Tannici.....part. 3

Mix.

300. *Pulvis Zinci et Amyli* ("*Dusting Powder*").

℞ Zinci Oxidi.....part. 1
Amyli.....part. 3

Mix.

Note.—The two preceding preparations are used as dusting powders, in bed-sores, prickly heat, etc.

301. *Trituratio Elaterini* (*Trituration of Elaterin*).

℞ Elaterini crystallisati.....gr. 1
Sacchari Lactis.....gr. 9

Mix thoroughly by trituration.
Dose: ¼ to 1 grain.

Note.—This preparation is officinal in the U. S. Ph. It is quoted here for the purpose of cautioning the physicians of the Department not to trust to the commercial Elaterium, which has become very unreliable. "Clutterbuck's Elaterium" is still quoted in price-lists, but Dr. Clutterbuck died in 1856, and what is now sold under that name is very variable in strength. The above trituration furnishes a standard substitute for elaterium, of about the same dose as the latter. Care should be taken not to confound the terms *elaterium* (the crude commercial substance deposited by standing from the juice of the squirting cucumber) and *elaterin*, the name of the active principle contained therein.

XI. MISCELLANEOUS FORMULÆ AND SUPPLEMENT.

302. *A-C-E Mixture.*

℞ Alcohol.....fl. ʒ 1
Chloroformi Purificati.....fl. ʒ 2
Ætheris Fortioris.....fl. ʒ 3

Mix. For Anæsthesia.

303. *Antiseptic Catgut.*

1. Place raw catgut into oil of juniper for twenty-four hours; then remove it, rinse it with alcohol, and keep it in alcohol until it is wanted for use.

Note.—The oil of juniper ought to be that distilled from the berries and not that obtained from the wood; macerating the catgut in the oil removes the fatty matter of the gut.

The sizes of catgut used in surgery are usually designated by numbers, which are, however, not uniform. The finer or thinner sizes are those known in trade as first and second banjo strings; the next as E violin, and the coarser kinds as A and D violin string.

304. *Antiseptic Gauzes.*

a. *Bichloride Gauze.*

Place absorbent or hospital gauze into a solution of bichloride of mercury of the strength of 1 in 1,000 for several hours. Wring it dry, roll it up, and put it away for use, wrapped in paraffin paper.

It may be rendered less irritating by using a solution of bichloride containing 10 per cent of glycerin.

Note.—All solutions of bichloride used for antiseptic purposes ought to be faintly tinted with fuchsin, so as to permit the solution, as well as the fabrics impregnated with it, to be distinguished, by their pinkish tint, from others.

Absorbent or hospital gauze is any kind of loosely woven muslin, completely deprived of fatty matter by repeated treatment with caustic alkalies, and subsequent washing. It is also usually bleached with chloride of lime, but must retain no traces of these substances. The commercial brands known as "Stillwater" or "Lehigh E." are the most suitable for this purpose.

b. *Boric Acid Gauze—Borated Gauze.*

Make a solution of 1 part of boric acid in 10 parts of boiling water. Saturate absorbent gauze with the solution, withdraw it, wring it out gently, only enough to keep the liquid dripping from it, and dry it. If no artificial drying appliance is available, such as heated rollers, the fabric should be hung up in a horizontal position, to prevent the solution from draining more to one side than the other.

Note.—The boric acid, which crystallizes on cooling, is apt to fall off the fabric when dry. This may be somewhat prevented by adding to the solution a little tincture of benzoin or a small quantity of a solution of shellac in borax, or a little glycerin.

c. *Carbolized Gauze* (after Lister).

Melt together 5 parts of resin, 7 parts of paraffin, and then add 1 part of carbolic acid. Impregnate loosely woven muslin with the mixture, in a properly arranged steam chamber, where the escape of carbolic acid vapors can be prevented. Remove the impregnated gauze after a few hours, wrap it in paraffin paper, and keep it in air-tight tin boxes.

d. *Carbolized Gauze* (after Bruns).

Dissolve 25 lbs. of resin in 13 gallons of alcohol; then add 5 lbs. of castor oil, 7 lbs. of carbolic acid, and 1 lb. of tincture of benzoin. Soak in this solution folded pieces of gauze muslin of suitable size (about 7 to 12 yards in length), and after they have been thoroughly saturated, pass them through a clothes-wringer to press out the excess of liquid. Let the pieces be spread out and stretched by two persons holding the ends, and let them be swung about for a few minutes, until the remaining alcohol has nearly evaporated, and the fabric feels only slightly damp. Then roll or fold them tightly, wrap them in paraffin paper, and keep them in air-tight boxes.

Note.—The alcohol may be replaced by wood-spirit, benzin, or other volatile solvents, but care must be taken to dissipate all traces of these solvents, so far as they are odorous. It is usually necessary to restore some of the carbolic acid, if any notable quantity has escaped, by exposing the fabric to the vapor of the acid before it is wrapped and put away.

e. *Iodoform Gauze.*

1. Dissolve 4 parts of iodoform in 16 parts (by weight) of ether. Then add 16 parts of alcohol, 2 parts of tincture of benzoin, and 2 parts of glycerin.

When preparing iodoform gauze at the bedside, pour such an amount of the above solution (which is *inflammable*) as will contain the amount of iodoform to be incorporated with the gauze, into a wide beaker or other suitable

vessel, and immerse the requisite quantity of absorbent gauze in it, so that it may completely soak up the liquid and will be uniformly impregnated with it. Then remove it, dry it as far as necessary by opening it out and swinging it about, and then apply it, or wrap it in paraffin paper and keep it in air-tight boxes. The gauze should not be exposed to sunlight.

Note.—Supposing a 10 per cent iodoform gauze is to be prepared. As the above solution contains 10 per cent of iodoform, weigh out 100 parts of it; also weigh out 88 parts of absorbent gauze, and make the latter take up the whole of the former. On drying, the gauze will retain the 10 parts of iodoform and the 2 parts of glycerin, and it will, therefore, be a 10 per cent iodoform gauze.

2. In some institutions, iodoform gauze is prepared by placing bichloride gauze into a mixture of equal volumes of alcohol and glycerin, wringing it out dry, and then rubbing any desired quantity of iodoform into it.

Note.—The odor of iodoform adhering to the hands after handling it, may be most readily removed by washing the hands in an aqueous solution of tannic acid.

f. *Naphthalin Gauze.*

Place bichloride gauze into a saturated solution of naphthalin in alcohol. Wring it out, dry it, and put it away in tightly-closed boxes.

305. *Antiseptic Silk.*

Boil the silk for twenty minutes in water. Then remove it, wring it out or press it, and place it into a solution of bichloride of mercury of the strength of 1 in 500.

306. *Antiseptic Solutions.*

PRELIMINARY NOTICE.—It is often required to prepare for immediate use a solution of a certain strength, designated either by percentage or by such terms as: "1 in 1,000," "1 in 1,500," etc. When great accuracy is required, or when the solvent is one which is much lighter or heavier than water, such solutions must be made by *weight*. When the solution is aqueous, however, and a fair approximation to the exact strength designated is sufficient for all practical purposes, the solution may be made in a more expeditious manner, by making it up to a definite *measure*.

The following table will give, at a glance, the quantities of any *solid* in *grains*, or of any *liquid* in *minims*, required to prepare a pint of a solution approximately of the desired strength:

TO MAKE 1 PINT OF A SOLUTION,

Required to contain of a certain drug	take of the drug	
1 in 10000	0.7 (1)	GRAINS OR MIN
1 " 5000	1.4 (1½)	" "
1 " 4000	1.8 (2)	" "
1 " 3000	2.4 (2½)	" "
1 " 2500	2.9 (3)	" "
1 " 2000	3.6 (3½)	" "
1 " 1500	4.8 (5)	" "
1 " 1000, or 1/10 PER CT.	7.2 (7)	" "
1 " 500 " 1/5 "	14.5 (14½)	" "
1 " 400 " ¼ "	18	" "
1 " 300 " 1/3 "	24	" "
1 " 200 " ½ "	36	" "
1 " 100 " 1 "	72	" "
1 " 50 " 2 "	144	" "
1 " 40 " 2½ "	180	" "
1 " 33 " 3 "	220	" "
1 " 30 " 3 1/3"	240	" "
1 " 25 " 4 "	288	" "
1 " 20 " 5 "	365	" "
1 " 10 " 10 "	720	" "
1 " 5 " 20 "	1440	" "
1 " 2 " 40 "	3600	" "

Supposing a 1-per-cent solution of carbolic acid is to be made, then take 72 minims of crystallized carbolic acid, just sufficiently heated to render it liquid (using a minim graduate which had previously been warmed), and dissolve it in enough water to make 1 pint.

If a 1 in 1,000 solution of bichloride of mercury is to be made, dissolve 7.2 grains of the salt in enough water to make 1 pint.

Under ordinary circumstances, it is not necessary to use the small fractions, but the quantities may be rounded off, as shown by the figures in parentheses.

Note.—1 pint of water measures 7,680 minims, but weighs only 7,291 grains. It is upon the *weight* of 1 pint of water that the above given proportions are based.

a. *Solution of Carbolic acid.*

A saturated solution of pure, crystallized carbolic acid in water, at the ordinary temperature, contains about 5 per cent of the acid, or 1 part in 20 parts.

b. *Solution of Boric Acid.*

1 part of boric or boracic acid is soluble in 25 parts of water at 59° F., and in 3 parts of boiling water.

A cold saturated aqueous solution, therefore, contains 4 per cent of the acid.

c. *Solution of Bichloride of Mercury.*

1 part of bichloride of mercury is soluble in 16 parts of water at 59° F., and in 2 parts of boiling water. It is also soluble in 3 parts of cold, and 1.2 parts of boiling alcohol.

A cold, saturated aqueous solution, therefore, contains 6¼ per cent of the salt.

Note.—All solutions containing bichloride of mercury, even those used for preparing bichloride gauze, ought to be distinguished by being faintly tinted with fuchsin, to prevent mistakes at the bedside. (See No. 304, a, note; and below, *Glyceritum Hydrargyri Bichloridi.*)

d. *Solution of Naphthol.*

1 part of Beta-naphthol is soluble in about 1,000 parts of cold water.

e. *Solution of Salicylic Acid.*

1 part of salicylic acid is soluble in 450 parts of water at 59° F., and in 14 parts of boiling water. Also in 2½ parts of cold and in less than 1 part of boiling alcohol.

307. *Antiseptic and Bleached Sponges*

Deprive the sponges of sand and dirt by beating and picking, and then wash them thoroughly in water. Wring them out and transfer them to a 1 per cent aqueous solution of permanganate of potassium, in which they should be well worked about. Remove them after about one hour, wash them thoroughly with water, and squeeze out the latter as much as possible. Then put them into a solution of hyposulphite of sodium, containing ½ pound in 1 gallon, to which some hydrochloric acid (1 fl. oz. for every gallon of the solution) had been added just previous to the immersion of the sponges. Leave them in this liquid for 15 minutes, occasionally squeezing them and working them about. Finally, take them out, wash them thoroughly, and having wrung them out, keep them in a 1 in 40 solution of carbolic acid.

Note.—Some sponges contain a large reddish core, which is not always bleached by one treatment. By repeating the operation the desired result is usually accomplished. (See NEW REMEDIES, 1883, 214.)

308. *Aqua Sedativa. (Eau Sedative Raspail.)*

℞ Sodii Chloridi..... ...gr. 440
Aquæ Ammoniæ..... ....♏ 360
Spir Camphoræ .....♏ 90
Aquæ destillatæ...q.s. ad fl. ℥ 16

Dissolve and mix.

309. *Aqueous Solutions for Convenience in Dispensing.*

Note.—These solutions should not be kept ready-made unless there is a constant demand for them, so that they will have to be frequently renewed. Some of them are saturated or nearly so; the others are of a strength established by long custom. Experience has shown that it is not superfluous to point out that the proportions refer to troy weight and apothecaries' measure. One pint of a solution of iodide of potassium of the strength of 1 grain in 1 minim, therefore, requires 16 *troy ounces* of the salt to be dissolved in enough water to make 16 *fluid-ounces*. That is, it requires 17 avoirdupois ounces and 242 grains of the salt to make 1 pint of the solution. The "pound to pint" system is, therefore incorrect, and will not be tolerated in this Department.

Acidum Boricum,	tr. oz.	1 in	30	fl. oz.
" Carbolicum,[1]	"	1 "	20	"
" " crudum,[2]	"	1 "	200	"
Alumen,	"	1 "	12	"
Ammonii Bromidum,	"	1 "	2	"
" Carbonas,	"	1 "	4	"
" Chloridum,	"	1 "	4	"
Chloral,	"	1 "	2	"
Cinchoninæ Sulphas,[3]	"	1 "	2	"
Magnesii Sulphas,	"	1 "	2	"
Plumbi Acetas,	"	1 "	2	"
Potassii Acetas,[4]	"	1 "	1	"
" Bicarbonas,	"	1 "	4	"
" Bromidum,	"	1 "	4	"
" Chloras,	"	1 "	16	"
" Iodidum,	"	1 "	1	"
Quininæ Sulphas,[3]	"	1 "	2	"
Sodii Bicarbonas,	"	1 "	12	"
" Boras,	"	1 "	16	"
" Bromidum,	"	1 "	2	"
" Chloras,[6]	"	1 "	2	"
" Salicylas,[5]	"	1 "	2	"
Zinci Acetas,	"	1 "	4	"
" Sulphas,	"	1 "	4	"

1. This is the usual strength kept in stock. It should be carefully labelled.
2. For disinfection. But it should be stated that this solution is too weak to destroy all forms of micro-organisms.
3. Both of these solutions are to be prepared with the aid of diluted sulphuric acid.
4. A saturated solution of this salt in water is not quite of the strength of 1 grain in 1 minim, but approximately so.
5. This should be tested for its reaction. If it is found alkaline it should be slightly acidulated with acetic acid. Even a neutral solution had better be thus acidulated, to prevent it from darkening. No iron utensils or filtering paper containing iron (such as the common gray filters) should be brought into contact with salicylic acid or salicylates, as they would become reddened by the iron.
6. It should be remembered that chlorate of *sodium* is *very* soluble in water, 1 in about 1.1 part, while chlorate of *potassium* is much less soluble, about 1 in 16 parts. The former salt is in many cases preferable to the latter.

310. *Explosive Mixtures.*

From the large number of substances or combinations of substances which are liable to ignite or explode under the influence of various causes, the following deserve mention here, as they are of more frequent occurrence in prescriptions than others.

Note.—A more complete list of them will be found in NEW REMEDIES for 1878, p. 165.

1. *Chlorate of Potassium.*

If this is triturated with readily oxidizable or combustible substances, such as sugar, tannic or gallic acids, dry vegetable powders, hypophosphites, sulphur, ferrocyanide of potassium, etc., etc., an explosion will result. The same will happen if sulphuric acid be dropped on a mixture of these substances with the salt.

In this Department, chlorate of potassium should *never* be prescribed in form of *powder*, in combination with any other substance.

A mixture of chlorate of potassium, tincture of chloride of iron, and glycerin, has been known repeatedly to explode, if the quantity of chlorate was large.

2. *Chorate of Sodium*

Requires the same precautions as the preceding.

3. *Permanganate of Potassium*

Should never be mixed, either dry or in solution, with readily oxidizable or combustible substances, such as glycerin, alcohol, reduced iron, etc., etc.

4. *Chromic Acid*

Behaves like the preceding in its tendency to part with its oxygen. The battery liquid prepared from bichromate of potassium and sulphuric acid has several times caused an explosion of a battery, probably through the accidental introduction of some readily oxidizable matter.

5. *Oil of Turpentine and other Volatile Hydrocarbons*

Are liable to explode or ignite when brought in contact with strong nitric or sulphuric acid, iodine, bromine, etc.

6. *Iodine,*

When brought in contact with strong water of ammonia, may produce the explosive iodide of nitrogen. In combination with ammoniated mercury it will, under certain conditions, produce an explosion. (See NEW REMEDIES, 1876, 40.)

7. *Nitrate of Silver*

Should never be combined with organic substances, or with easily reducible inorganic substances. If the reduction takes place rapidly, an explosion may result.

8. *Nitric and Nitrohydrochloric (Nitromuriatic) Acids*

Are apt to cause a violent reaction, and in a closed bottle, an explosion, when combined with oxidizable substances.

9. *Borax, Bicarbonate of Sodium, Glycerin, and Water.*

When these are mixed, one-half of the carbonic acid of the bicarbonate will be set free. This reaction must be allowed to terminate before the bottle containing the mixture is stoppered.

10. *Chloride of Lime,*

When combined with glycerin, or sulphate of ammonium, or honey, evolves a gas which, if confined, will fracture the bottle.

11. *Spirit of Nitrous Ether*

Will react (produce effervescence, etc.) with certain substances or preparations, for instance Fluid Extract of Uva Ursi.

311. *Fehling's Solution. (Reagent for Glucose.)*

Fehling's Solution, completely mixed and ready for use, cannot be kept long without change. For this reason it is supplied by the General Drug Department in two separate portions or solutions, of which equal measures are to mixed when the reagent is to be used.

1. *The Copper Solution.*

Dissolve 34.64 grammes (or 534.5 grains) of pure crystallized sulphate of copper in enough distilled water to make 500 cubic centimeters (or 16.9 fluidounces).

2. *The Rochelle Salt Solution.*

Dissolve 173 grammes (or 2,670 grains) of pure, recrystallized Rochelle salt in enough solution of soda (spec. grav. 1.140) to make 500 cubic centimeters (or 16.9 fluidounces).

For use, measure equal volumes of each solution, and mix them by pouring the copper solution into the Rochelle salt solution—*not* vice versa.

10 cub. cent. of the mixture correspond to 0.05 Gm. of glucose.

220 minims of the mixture correspond to 1 grain of glucose.

Note.—2 molecules of glucose ($2\ C_6H_{12}O_6 = 360$) reduce 10 molecules of cupric oxide ($10\ CuO = 794$).
1 molecule of lactose ($C_{12}H_{22}O_{11} = 342$) reduce 7 molecules of cupric oxide ($7\ CuO = 555.8$).

(To be continued.)

Application for Painful Teeth.—A contributor to the *Union Médicale* gives the following formula:

Dry Alcoholic Extract of Opium	1 part.
Camphor	1 "
Balsam of Peru	1 "
Mastic	2 parts.
Chloroform	20 "

A pellet of cotton soaked in the solution is to be introduced into the cavity.

Diuretic Wine, Trousseau.—"Vin Diuretique, Hôtel Dieu," as devised by Trousseau, is prepared as follows:

Digitalis	5 parts.
Squill	7½ "
Juniper	75 "
Acetate Potassium	50 "
Alcohol, 90%	100 "
White Wine	900 "

Break up the digitalis, squill, and juniper berries, and macerate for a fortnight in the wine and alcohol, frequently stirring. Press, strain, add the acetate, and filter.

Prince Albert Cachou.

Mace	420 grains.
Cardamom	80 "
Cloves	40 "
Vanilla	120 "
Orris Root	160 "
Musk	5 "
Liquorice Root	540 "
Oil Peppermint	30 drops.
" Lemon	20 "
" Neroli	10 "
" Cinnamon	10 "
Mucilage	q. s.

Mix the first-named ingredients, in powder, with the essential oils; then form a mass with mucilage, and divide it into pills of one grain each, which are afterwards silvered.—After *Pharm. Zeit.*

New Recipes for Perfumes.

E. SOXHLET, of Vienna, furnishes the following new recipes:

1. *Eau de Cologne.*

Oil Neroli	5 parts.
" Bergamot	45 "
" Lemon	20 "
" Lavender	1 part.
" Rosemary	1 "
Aseptic Acid	1 "
Benzoin	½ "
Deodorized Alcohol	1,250 parts.

Digest 14 days, then filter.

[NOTE.—Aseptic acid is probably identical with the orthophenolsulphonic acid, known in commerce as aseptol or sozolic acid, and obtainable in solution containing 33⅓%.]

2. *Court Bouquet.*

Oil Bergamot	10 parts
" Neroli	1½ "
Orris Root	30 "
Storax, liquid	½ part
Musk	½ "
Deodorized Alcohol	150 parts

Digest 14 days, then filter.

3. *Ess-Bouquet.* (Said to be the best formula so far devised, and very similar to that of Baley & Co., of London.)

Extract of Jasmine	50 parts.
" " Reseda	50 "
" " Violets	50 "
Orris Root	30 "
Storax, liquid	½ part.
Ambergris	½ "
Oil Curaçao	5 parts.

Digest 14 days, and filter.

4. *Heliotrope Extract.*

Vanilla	1 Gm.
Oil Neroli	1 drop.
Oil Bitter Almonds	2 drops.
Musk	0.1 Gm.
Benzoin	3 "
Deodorized Alcohol	100 "

Digest 8 days, and filter.—*Neueste Erfind. und Erfahr.*

Corn Plaster.—

Adhesive Plaster	100 parts
Subacetate of Copper	8 "
Carbolic Acid	8 "

M.

Chartreuse.—A recent formula published by the *Zeitsch. f. Spir. und Pressh. Industrie* and the *Zeitschr. d. Oest. Apoth. Ver.* is as follows (reduced to U. S. weights and measures):

Angelica seed	4 oz.
Angelica root	1 "
Arnica flowers	½ "
Coriander	8 "
Hyssop	4 "
Melissa	16 "
Absinth	4 "
Cardamom	½ "
Cinnamon, Ceylon	½ "
Mace	½ "
Cloves	½ "
Alcohol 95%	39 quarts.
Water	22 "

Digest the whole during 24 hours, then distil off the liquid and mix with a syrup prepared by heat from 50 lbs. of sugar. When cold, add 2 quarts of finest cognac, ½ oz. of solution of citric acid, and enough water to make 110 quarts. Color it golden-yellow with tincture of saffron. By age the product improves.

A good moth powder is made of ground hops, one drachm; Scotch snuff, two ounces; camphor gum, one ounce; black pepper, one ounce; cedar sawdust, four ounces; mix thoroughly and strew among the furs and woollens to be protected.

Compound Solution of Chloroform.—B. L. Maltbie reviews the history of chlorodyne, giving a few of the formulas which are presumed to resemble the original one, and includes one devised by himself, as follows:

Hydrochlorate of morphine	16 grains
Alcohol	12 fl. drs.
Tinct. Cannabis Indica	4 "
Oil Peppermint	6 minims
Tinct. Capsicum	15 "
Chloroform	4 fl. drs.
Dilute Hydrocyanic Acid	1 fl. dr.
Glycerin, sufficient to make	4 fl. oz.

Dissolve the morphine in the alcohol and add the other ingredients in the order given.—*West. Drugg.*

Cement for Glass and Porcelain.—

Isinglass	30 parts
Water	30 "
Glacial Acetic Acid	60 "
Mastic	3 "

Mix.

Furniture Polish.—A correspondent informs us that the following is easily prepared and works well:

Alcohol	4 ounces
Turpentine	2 "
Damar Varnish	1 ounce
Raw Linseed Oil	8 ounces
Acetic Acid	1 ounce

Mix.

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VICK'S ILLUSTRATED MONTHLY MAGAZINE AND FLORAL GUIDE, published by JAMES VICK, the seedsman of Rochester, N. Y., has reached its tenth year of existence, and continues to be a handsome and interesting periodical.

DRUGS AND MEDICINES OF NORTH AMERICA, by J. U. and C. G. LLOYD. Cincinnati: Dec., 1886. Vol. II., No. 3.

THIS fasciculus (pp. 67 to 98) relates to *Lobelia inflata* and *L. syphilitica.*

THE CALENDAR OF THE PHARMACEUTICAL SOCIETY OF GREAT BRITAIN. 1887, pp. 521, 8vo, 1*s.*

THIS volume contains the text of laws relating to pharmacy; the incorporation of the society, its regulations, membership, accounts of the Benevolent Fund, etc.

THE Matthews Catalogue and Price-List for 1887 contains a number of novelties in addition to descriptions of well-known forms of apparatus.